

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Susy Tsong-Foster Examiner #: 76063 Date: 10/23/02  
 Art Unit: 1745 Phone Number: 305-0588 Serial Number: 09/689, 817  
 Mail Box and Bldg/Room Location: CP3 8A 09 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keys-ords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Molded Electrode, method for production thereof and secondary battery using thereof.  
 Inventors (please provide full name): Please see attached list

Earliest Priority Filing Date: 10/14/1999

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please see claim 3 The Examiner is not giving weight to the term "molded" in the preamble of claim 3.

Please search for an electrode comprising:

(a) an electrode material comprising a polymer active material, a conductivity-enhancing agent and a plasticizer and

(b) at least one current collector sheet; the electrode material and the current collector sheet formed into one piece, and the ratio of the volume of the electrode material and the volume of the current collector sheet being 30:1 to 100:1, provided the volume of the terminal portion of the current collector sheet is excluded from the volume of the current collector sheet. Equivalently, please search for the ratio of the thickness of the electrode material to the thickness of the current collector sheet being 30:1 to 100:1.

Thank you.

## STAFF USE ONLY

Searcher: R. F. Foster  
 Searcher Phone #: \_\_\_\_\_  
 Searcher Location: \_\_\_\_\_  
 Date Searcher Picked Up: \_\_\_\_\_  
 Date Completed: 10/29/02  
 Searcher Prep & Review Time: 20  
 Clinical Prep Time: \_\_\_\_\_  
 Online Time: 47

## Type of Search

NA Sequence (N) \_\_\_\_\_  
 AA Sequence (A) \_\_\_\_\_  
 Structure (S) \_\_\_\_\_  
 Bibliographic ☒ \_\_\_\_\_  
 Litigations \_\_\_\_\_  
 Patents \_\_\_\_\_  
 Patent Family \_\_\_\_\_  
 Other \_\_\_\_\_

## Vendors and cost where applicable

STN ☒ \_\_\_\_\_  
 Dialog \_\_\_\_\_  
 Quest/Orbi \_\_\_\_\_  
 Di Link \_\_\_\_\_  
 Lexis/Nexis \_\_\_\_\_  
 Sequence Systems \_\_\_\_\_  
 WWW/Internet \_\_\_\_\_  
 Other (specify): \_\_\_\_\_

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FILE COVERS 1907 - 29 Oct 2002 VOL 137 ISS 18  
 FILE LAST UPDATED: 28 Oct 2002 (20021028/ED)

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=> D QUE L13  
 L4 7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)  
 L5 84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?  
 L6 257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A)COLLECT?  
 L7 21 SEA FILE=HCAPLUS ABB=ON L5 AND L6  
 L8 1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)  
 L9 27 SEA FILE=HCAPLUS ABB=ON L5 AND L8  
 L10 39 SEA FILE=HCAPLUS ABB=ON L7 OR L9  
 L11 9 SEA FILE=HCAPLUS ABB=ON L7 AND L9  
 L12 19 SEA FILE=HCAPLUS ABB=ON L10 AND (BOND? OR PRESS?)  
 L13 22 SEA FILE=HCAPLUS ABB=ON L11 OR L12

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FILE LAST UPDATED: 26 OCT 2002 <20021026/UP>  
 MOST RECENT DERWENT UPDATE: 200269 <200269/DW>  
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> SLART (Simultaneous Left and Right Truncation) is now available in the /ABEX field. An additional search field /BIX is also provided which comprises both /BI and /ABEX <<<

>>> The BATCH option for structure searches has been enabled in WPINDEX/WPIDS and WPIX <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

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[http://www.derwent.com/userguides/dwpi\\_guide.html](http://www.derwent.com/userguides/dwpi_guide.html) <<<

=> D QUE L16

L4	7393	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)
L5	84	SEA FILE=HCAPLUS ABB=ON	L4 AND CURRENT?(2A)COLLECT?
L6	257	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A)COLLECT?
L7	21	SEA FILE=HCAPLUS ABB=ON	L5 AND L6
L8	1671	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)
L9	27	SEA FILE=HCAPLUS ABB=ON	L5 AND L8
L10	39	SEA FILE=HCAPLUS ABB=ON	L7 OR L9
L14	18	SEA FILE=WPIX ABB=ON	L10 AND (BOND? OR PRESS?)
L15	4	SEA FILE=WPIX ABB=ON	L7 AND L9
L16	21	SEA FILE=WPIX ABB=ON	L14 OR L15

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FILE LAST UPDATED: 11 SEP 2002 <20020911/UP>  
FILE COVERS APR 1973 TO MAY 31, 2002

>>> JAPIO has been reloaded on August 25 and saved answer sets  
will no longer be valid. SEE HELP RLO for details <<<

=> D QUE L27

L4	7393	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)
L5	84	SEA FILE=HCAPLUS ABB=ON	L4 AND CURRENT?(2A)COLLECT?
L6	257	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A)COLLECT?
L7	21	SEA FILE=HCAPLUS ABB=ON	L5 AND L6
L8	1671	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)
L9	27	SEA FILE=HCAPLUS ABB=ON	L5 AND L8
L10	39	SEA FILE=HCAPLUS ABB=ON	L7 OR L9
L14	18	SEA FILE=WPIX ABB=ON	L10 AND (BOND? OR PRESS?)
L15	4	SEA FILE=WPIX ABB=ON	L7 AND L9
L17	109	SEA FILE=JAPIO ABB=ON	L14 OR L15
L19	74	SEA FILE=JAPIO ABB=ON	L17 AND H01M0047/IC
L21	7	SEA FILE=JAPIO ABB=ON	L19 AND (POLYMER? OR PLASTIC? OR MACROMOL?)
L22	2545	SEA FILE=JAPIO ABB=ON	H01M0047/IC AND CURRENT?(2A)COLLECT?
L24	193	SEA FILE=JAPIO ABB=ON	L22 AND (BOND? OR PRESS? OR MOLD? OR MOULD?) (3A) (ELECTRODE? OR ANODE? OR CATHODE?)
L25	153	SEA FILE=JAPIO ABB=ON	L24 AND BATTER?
L26	18	SEA FILE=JAPIO ABB=ON	L25 AND (POLYMER? OR PLASTIC? OR MACROMOL?)
L27	23	SEA FILE=JAPIO ABB=ON	L21 OR L26

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=> D QUE L28

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L5	84	SEA FILE=HCAPLUS ABB=ON	L4 AND CURRENT?(2A)COLLECT?
L6	257	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A)COLLECT?
L7	21	SEA FILE=HCAPLUS ABB=ON	L5 AND L6
L8	1671	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)
L9	27	SEA FILE=HCAPLUS ABB=ON	L5 AND L8
L10	39	SEA FILE=HCAPLUS ABB=ON	L7 OR L9
L14	18	SEA FILE=WPIX ABB=ON	L10 AND (BOND? OR PRESS?)
L15	4	SEA FILE=WPIX ABB=ON	L7 AND L9
L28	0	SEA FILE=JICST-EPLUS ABB=ON	L14 OR L15

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=> D QUE L30

L4	7393	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)
L5	84	SEA FILE=HCAPLUS ABB=ON	L4 AND CURRENT?(2A)COLLECT?
L6	257	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A)COLLECT?
L7	21	SEA FILE=HCAPLUS ABB=ON	L5 AND L6
L8	1671	SEA FILE=HCAPLUS ABB=ON	(MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)
L9	27	SEA FILE=HCAPLUS ABB=ON	L5 AND L8
L10	39	SEA FILE=HCAPLUS ABB=ON	L7 OR L9
L14	18	SEA FILE=WPIX ABB=ON	L10 AND (BOND? OR PRESS?)
L15	4	SEA FILE=WPIX ABB=ON	L7 AND L9
L30	1	SEA FILE=NTIS ABB=ON	L14 OR L15

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FILE COVERS 1969 TO DATE.

=> D QUE L31

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L4      7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR
        ANODE? OR CATHODE?)
L5      84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?
L6      257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A)COLLECT?
L7      21 SEA FILE=HCAPLUS ABB=ON L5 AND L6
L8      1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A) (ANODE? OR
        CATHODE? OR ELECTRODE?)
L9      27 SEA FILE=HCAPLUS ABB=ON L5 AND L8
L10     39 SEA FILE=HCAPLUS ABB=ON L7 OR L9
L14     18 SEA FILE=WPIX ABB=ON L10 AND (BOND? OR PRESS?)
L15     4 SEA FILE=WPIX ABB=ON L7 AND L9
L31     0 SEA FILE=INSPEC ABB=ON L14 OR L15
    
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FILE COVERS 1974 TO DATE.

>>> NEW CLASSIFICATION SCHEME - SEE HELP CLA <<<

>>> USING THE NEW CLASSIFICATION CODES FOR RETRIEVAL A ROUTINE  
 WILL AUTOMATICALLY FIND ALL FORMERLY USED RELEVANT ENERGY-  
 AND INIS-CATEGORIES <<<

=> D QUE L29

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L4      7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR
        ANODE? OR CATHODE?)
L5      84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?
L6      257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A)COLLECT?
L7      21 SEA FILE=HCAPLUS ABB=ON L5 AND L6
L8      1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A) (ANODE? OR
        CATHODE? OR ELECTRODE?)
L9      27 SEA FILE=HCAPLUS ABB=ON L5 AND L8
L10     39 SEA FILE=HCAPLUS ABB=ON L7 OR L9
L14     18 SEA FILE=WPIX ABB=ON L10 AND (BOND? OR PRESS?)
L15     4 SEA FILE=WPIX ABB=ON L7 AND L9
L29     1 SEA FILE=ENERGY ABB=ON L14 OR L15
    
```

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FILE COVERS 1970 TO DATE.

=> D QUE L32

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L4      7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR
        ANODE? OR CATHODE?)
L5      84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?
L6      257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A)COLLECT?
L7      21 SEA FILE=HCAPLUS ABB=ON L5 AND L6
    
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KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

L8 1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) (4A) (ANODE? OR CATHODE? OR ELECTRODE?)  
 L9 27 SEA FILE=HCAPLUS ABB=ON L5 AND L8  
 L10 39 SEA FILE=HCAPLUS ABB=ON L7 OR L9  
 L14 18 SEA FILE=WPIX ABB=ON L10 AND (BOND? OR PRESS?)  
 L15 4 SEA FILE=WPIX ABB=ON L7 AND L9  
 L32 1 SEA FILE=COMPENDEX ABB=ON L14 OR L15

=> DUP REM L13 L16 L27 L30 L29 L32

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 PROCESSING COMPLETED FOR L16  
 PROCESSING COMPLETED FOR L27  
 PROCESSING COMPLETED FOR L30  
 PROCESSING COMPLETED FOR L29  
 PROCESSING COMPLETED FOR L32  
 L33 67 DUP REM L13 L16 L27 L30 L29 L32 (2 DUPLICATES REMOVED)

=> D L33 ALL 1-67

L33 ANSWER 1 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2002:368792 HCAPLUS  
 DN 136:378574  
 TI Method of manufacturing a electric double layer supercapacitor with electrode of carbon particle layer  
 IN Maletina, Yuri A.; Strizhakova, Natalie G.; Izotov, Vladimir Y.; Mironova, Antonia A.; Kozachkov, Sergey G.; Danilin, Valery A.; Podmogilny, Sergey N.; Arulepp, Mati; Aleksandrovna, Kukusjkina Julia; Efimovity, Kravtjik Aleksandr; Vasilevity, Sokolov Vasilij; Perkson, Anti; Leis, Jaan; Zheng, Jie; Konstantinovich, Gordeev Sergey; Kolotilova, Julia Y.; Cederstroem, Jan; Wallace, Clarence L.  
 PA Ultratec Ltd., UK  
 SO PCT Int. Appl., 48 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM H01G009-00

CC 76-10 (Electric Phenomena)  
Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002039468	A2	20020516	WO 2001-EP12837	20011106
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002014042	A5	20020521	AU 2002-14042	20011106
	US 2002097549	A1	20020725	US 2001-986569	20011109
PRAI	US 2000-247593P	P	20001109		
	RU 2001-117550	A	20010615		
	WO 2001-EP12837	W	20011106		
AB	The present invention relates to an elec. double layer capacitor including a pair of polarizable <b>electrodes</b> connected to <b>current collectors</b> , a separator made of ion-permeable but electron-insulating material interposed between the <b>electrodes</b> in each pair of <b>electrodes</b> , and a liq. electrolyte. According to the invention the <b>electrodes</b> include a layer of C particles having a narrow distribution of nanopores therein, the pore sizes of the nanopores being adapted to fit the ion sizes of the electrolyte.				
ST	elec double layer carbon particle supercapacitor manuf				
IT	Fluoropolymers, processes				
	RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) (binder made of; elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Particles (carbon; elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Welding of metals (diffusion, <b>electrode</b> sheet and conductive foil attachment; elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Mixing (dry, wet, muller; elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Binders Capacitor <b>electrodes</b> Electrolytes Filaments Halogenation Thermal decomposition (elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Welding of metals (laser, <b>electrode</b> sheet and conductive foil attachment; elec. double layer supercapacitor with <b>electrode</b> of carbon particle layer and a method of manufg. such a supercapacitor)				
IT	Polyesters, processes				

- RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(nuclear membrane; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT **Molding**  
(press, **electrode** sheet and conductive foil attachment; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT **Dielectric films**  
(separator, porous; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT **Paper**  
(separator; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 68-12-2, Dimethylformamide, uses 75-05-8, Acetonitrile, uses 78-93-3, Methyl ethyl ketone, uses 96-48-0, gamma.-Butyrolactone 96-49-1, Ethylene carbonate 100-47-0, Benzointrile, uses 107-12-0, Propionitrile 108-29-2, gamma.-Valerolactone 108-32-7, Propylene carbonate 109-74-0, Butyronitrile 109-99-9, Tetrahydrofuran, uses 110-67-8, 3-Methoxypropionitrile 110-71-4 872-50-4, N-Methyl pyrrolidone, uses
- RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)  
(aprotic polar solvent; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 9002-84-0 24937-79-9, Polyvinylidene fluoride  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(binder made of; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 124-38-9, Carbon dioxide, processes 7647-01-0, Hydrogen chloride, processes 7664-93-9, Sulfuric acid, processes 7681-52-9, Sodium hypochlorite 7697-37-2, Nitric acid, processes 7732-18-5, Water, processes
- RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(in for remaining carbon particles oxidn.; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 7631-86-9, Silica, processes  
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(included in **electrode**; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 14874-70-5D, Tetrafluoroborate, N,N-dialkyl-1,4-diazabicyclo[2.2.2]octanediium salts 14874-70-5D, Tetrafluoroborate, tetraalkylammonium salts 14874-70-5D, Tetrafluoroborate, tetrakis(dialkylamino) phosphonium salts 16919-18-9D, Hexafluorophosphate, N,N-dialkyl-1,4-diazabicyclo[2.2.2]octanediium salts 16919-18-9D, Hexafluorophosphate, tetraalkylammonium salts 16919-18-9D, Hexafluorophosphate, tetrakis(dialkylamino) phosphonium salts  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material

- use); PROC (Process); USES (Uses)  
 (liq. electrolyte made of; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 9003-07-0, Polypropylene  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (nonwoven, separator; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 25038-59-9, Polyethylene terephthalate, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (nuclear membrane; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 7440-44-0, Carbon, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (particles; elec. double layer supercapacitor with **electrode**  
 of carbon particle layer and a method of manufg. such a supercapacitor)
- IT 110320-40-6, Polypropylene carbonate  
 RL: DEV (Device component use); NUU (Other use, unclassified); PEP  
 (Physical, engineering or chemical process); PYP (Physical process); PROC  
 (Process); USES (Uses)  
 (secondary binder; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 9002-88-4, Polyethylene  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (separator film; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 9004-34-6, Cellulose, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (separator paper; elec. double layer supercapacitor with  
**electrode** of carbon particle layer and a method of manufg. such  
 a supercapacitor)
- IT 7782-42-5, Graphite, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); TEM (Technical or engineered material  
 use); PROC (Process); USES (Uses)  
 (thermo-expanded graphite in capacitor **electrode**; elec.  
 double layer supercapacitor with **electrode** of carbon particle  
 layer and a method of manufg. such a supercapacitor)

L33 ANSWER 2 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 2002:290706 HCAPLUS

DN 136:312576

TI Method for preparing **electrodes** for Ni/metal hydride secondary  
 batteries using copper

IN Lee, Jai Young; Jang, Kuk Jin; Kim, Dong Myung; Yu, Ji Sang; Lee, Sang  
 Min; Lee, Ho

FA Korea Advanced Institute of Science and Technology, S. Korea  
 SO U.S., 17 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM H01M004-66  
 ICS H01M004-58  
 NCL 429218200  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 56  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6372383	B1	20020416	US 2000-494596	20000131
AB	Disclosed is a method for prepg. a high performance, neg. <b>electrode</b> for Ni/metal hydride cells. A Zr-based hydrogen storage alloy, a binder comprising a mixt. of polytetrafluoroethylene and a thickening agent (hydroxypropylmethyl cellulose), and a <b>current collector</b> comprising carbon black and copper are slurried and <b>molded</b> into a paste-type <b>electrode</b> . In a closed type cell, the copper repetitively undergoes melting and deposition on the <b>electrode</b> during charging and discharging cycles, allowing the <b>electrode</b> to show a similar change in surface morphol. and electrochem. properties to that of a conventionally electroless plated <b>electrode</b> . Giving a contribution to the improvement in cell properties, including inner cell <b>pressure</b> , high rate dischargeability and energy d. per vol., the method can substitute conventional alloy surface modifying methods, such as electroless plating methods and other pre-treatment processes necessary for the prepn. of <b>electrodes</b> , which are difficult to practice owing to the prodn. of pollution of the environment and to requirement of addnl. procedures.				
ST	Battery nickel metal hydride <b>electrode</b> prepn; <b>anode</b> prepn nickel metal hydride battery; copper use <b>anode</b> prepn nickel metal hydride battery				
IT	Acrylic polymers, uses Fluoropolymers, uses RL: MOA (Modifier or additive use); USES (Uses) (binder; method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
IT	Battery <b>anodes</b> Secondary batteries (method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
IT	Carbon black, uses RL: DEV (Device component use); USES (Uses) (method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
IT	9002-84-0, Ptfе RL: MOA (Modifier or additive use); USES (Uses) (binder; method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
IT	7440-50-8, Copper, uses 212510-16-2 RL: DEV (Device component use); USES (Uses) (method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
IT	9004-65-3, Hydroxypropyl methyl cellulose RL: TEM (Technical or engineered material use); USES (Uses) (method for prepg. <b>electrodes</b> for Ni/metal hydride secondary batteries using copper)				
RE.CNT	8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD				

RE

- (1) Humphrey; US 5922493 A 1999 HCAPLUS
- (2) Komada; US 5932369 A 1999 HCAPLUS
- (3) Lee, J; Department of Materials Science and Engineering 1995, P144
- (4) Ogura; US 6171727 B1 2001 HCAPLUS
- (5) Sakai, T; Journal of Less-Common Metals 1991, V172-174, P1175
- (6) Sawa; US 6030724 A 2000 HCAPLUS
- (7) Sawa, H; Materials Transaction, JIM 1990, V31(6), P487 HCAPLUS
- (8) Yamano; US 4636445 A 1987 HCAPLUS

L33 ANSWER 3 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 2002:695569 HCAPLUS

DN 137:219565

TI The filling of a fuel cell **anode current collector** with a reforming catalyst

IN Hoffmann, Joachim

PA MTU Friedrichshafen G.m.b.H., Germany

SO Ger., 6 pp.

CODEN: GWXXAW

DT Patent

LA German

IC ICM H01M008-02

ICS H01M008-06

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10063546	C1	20020912	DE 2000-10063546	20001220

AB The reforming catalyst is present in voids inside the **anode current collector**. A neg. mold which corresponds to the shape of the **anode current collector**, with its voids, is made from a material that can be thermally decompd. The voids of the neg. mold are filled with the reforming catalyst and the mold is inserted into the **anode current collector**. The mold is then burnt out.

ST fuel cell **anode current collector** reforming catalyst mold

IT Fuel cell **electrodes**  
(catalytic; filling of a fuel cell **anode current collector** with a reforming catalyst)

IT **Molds** (forms)  
Reforming catalysts  
Thermal decomposition  
Voids (structures)  
(filling of a fuel cell **anode current collector** with a reforming catalyst)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; JP 02195654 A HCAPLUS
- (2) Anon; JP 06196184 A
- (3) Anon; JP 08236129 A HCAPLUS
- (4) Anon; JP 10092447 A HCAPLUS
- (5) Anon; US 5348814 A HCAPLUS
- (6) Anon; US 5660941 A HCAPLUS

L33 ANSWER 4 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 2002-541836 [58] WPIX

DNN N2002-429218 DNC C2002-153942

TI A carbonaceous material has bore distribution, a low specific surface

area, a polarization **electrode** for an electric double layer capacitor and the electric double layer capacitor.

DC AB5 L03 V01  
IN HASHIMOTO, Z; MINAMIRU, S; MITSUHASHI, H; SATO, T; SHIMIZU, T; YOSHIDA, H  
PA (ITOC-N) ITOCHU CORP; (NISN) NISSHINBO IND INC; (NISN) NISSHIN SPINNING CO LTD; (ITOT-N) ITO TADASHI SHOJI KK; (HASH-I) HASHIMOTO Z; (MINA-I) MINAMIRU S; (MITS-I) MITSUHASHI H; (SATO-I) SATO T; (SHIM-I) SHIMIZU T; (YOSH-I) YOSHIDA H

CYC 5

PI JP 2002128514 A 20020509 (200258)\* 24p C01B031-08  
CA 2358776 A1 20020416 (200258) EN H01G009-058  
CN 1349234 A 20020515 (200260) H01G009-042  
US 2002126439 A1 20020912 (200262) H01G009-00  
KR 2002030030 A 20020422 (200269) H01G009-058  
ADT JP 2002128514 A JP 2000-315563 20001016; CA 2358776 A1 CA 2001-2358776 20011015; CN 1349234 A CN 2001-135791 20011016; US 2002126439 A1 US 2001-977361 20011016; KR 2002030030 A KR 2001-63675 20011016

PRAI JP 2000-315563 20001016

IC ICM C01B031-08; H01G009-00; H01G009-042; H01G009-058  
ICS C09D005-00; C09D007-12; C09D101-00; C09D103-00; C09D127-12; C09D129-04; C09D175-04; C09D201-00; D01F009-145; H01G009-038; H01G009-155; H01M010-40

AB JP2002128514 A UPAB: 20020910

NOVELTY - In a bore distribution obtained from nitrogen-adsorbing isothermal line, a carbonaceous material has a bore volume having a bore radius of 10 angstroms or less of 70% or less of the entire bore volume.

USE - The carbonaceous material is used for the polarization **electrode** for use in the electric double layer capacitor.

ADVANTAGE - The nonaqueous electrolytic solution is penetrated into the interior of the carbonaceous material. An ion molecule is adsorbed to the surface of the carbonaceous material. The carbonaceous material has the bore distribution and a low specific surface area suitable for forming the electric double layer capacitor. The electric double layer capacitor has high voltage, high energy density, high capacity, and long repeated life. A small type is available for the electric double layer capacitor.  
Dwg. 0/4

FS CPI EPI

FA AB

MC CPI: A12-E07B; L03-B03

EPI: V01-B01A; V01-B01B; V01-B01D

L33 ANSWER 5 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:414771 HCAPLUS

DN 135:21926

TI Lithium manganese oxide **cathode** active mass and its manufacture for secondary nonaqueous-electrolyte lithium battery

IN Nakashima, Motoe; Tanaka, Muneyuki; Uchikawa, Akio

PA Hitachi Metals, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01M004-58

ICS H01M004-02; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 49

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001155728	A2	20010608	JP 1999-332427	19991124

AB The **cathode** active mass is spinel Li-Mn oxide powder comprising  
 (1) primary particles with particle size distribution 1-20  $\mu\text{m}$  and the  
 ratio of the max. particle size to the min. particle size  $\geq 3.0$  and  
 (2) secondary particles which are agglomeration of the primary particles.  
 Battery **cathode**, which is obtained by applying the active mass  
 on a **current collector** and **pressure**  
**molding**, has **cathode d.**  $\geq 2.5 \text{ g/cm}^3$ . The active  
 mass is manufd. by firing a mixt. of Mn oxide and Li salt (Li carbonate,  
 etc.) at 1000-1100.degree. in the atm. and firing again at  
 600-1000.degree. The battery using the active mass has high discharge  
 capacity and shows good cycling performance.

ST spinel lithium manganese oxide **cathode** battery

IT Battery **cathodes**  
 Firing (heat treating)  
 (manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step  
 firing of raw material for Li battery)

IT 39457-42-6P, Lithium manganese oxide  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step  
 firing of raw material for Li battery)

IT 554-13-2, Lithium carbonate 1313-13-9, Manganese dioxide, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step  
 firing of raw material for Li battery)

L33 ANSWER 6 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:299243 HCAPLUS

DN 134:329044

TI Battery **electrode molds**, their preparation, and  
 secondary batteries using same **electrode molds**

IN Fujiwara, Masaki; Nakagawa, Yuji; Kurosaki, Masato; Kaneko, Shinako;  
 Harada, Manabu; Nishiyama, Toshihiko

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKKXAF

DT Patent

LA Japanese

IC ICM H01M004-02

ICS H01M004-04; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001118565	A2	20010427	JP 1999-292537	19991014
	GB 2355579	A1	20010425	GB 2000-25172	20001013
PRAI	JP 1999-292537	A	19991014		

AB Battery **electrode molds** comprise (A) one sheet of  
**current collectors**, and (B) 300  $\mu\text{m}$ -9 mm thickness of  
**electrode materials** contg. macromol. active mass, auxiliary elec.  
 conductive agents, and plasticizers, formed at least on one side of the  
**current collectors**. Alternatively, multiple sheets of  
 the **current collectors** (spaced from one another by a  
 prescribed distance) are arranged instead. The vol. ratio of the  
**electrode materials** and the **current collectors**  
 may be 30-100:1. The **electrode molds** are prepd. by  
 thermally **pressing** the elements. Secondary batteries using the  
**electrode molds** as **anodes** and/or  
**cathodes** are also claimed. Since the **electrode**

*applicant*

- molds are free from binders, the batteries can achieve high adhesion and low elec. resistivity between the **current collectors** and the **electrodes**, and high energy d.
- ST battery macromol **electrode bonding current collector**; polymer **electrode battery bonding current collector**
- IT Electric conductors  
(**current collectors**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT Sulfonic acids, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(polycyanindole doped with, **electrode active mass**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT Battery **electrodes**  
(secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT 7440-02-0, Nickel, uses 7440-25-7, Tantalum, uses  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(**current collectors**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT 51109-40-1  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(**electrode active mass**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT 25233-30-1P, Polyaniline  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process); USES (Uses)  
(p-toluenesulfonate-doped, **electrode active mass**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT 104-15-4, p-Toluenesulfonic acid, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(polyaniline doped with, **electrode active mass**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- IT 91201-84-2, 5-Cyanoindole homopolymer  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(sulfate-doped, **electrode active mass**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)
- L33 ANSWER 7 OF 67 WPIX (C) 2002 THOMSON DERWENT  
AN 2001-300246 [31] WPIX  
DNN N2001-215456 DNC C2001-092181  
TI Seamless **cathode** tube by applying **cathode** coating mixture to **current collector** tube.  
DC A85 L03 X16

IN CHI, I; CINTRA, G; SEARLE, G  
 PA (GILL) GILLETTE CO  
 CYC 95

PI WO 2001028014 A1 20010419 (200131)\* EN 19p H01M004-88  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TZ UG ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
 DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
 LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
 SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
 AU 2000080137 A 20010423 (200147) H01M004-88  
 EP 1230698 A1 20020814 (200261) EN H01M004-88  
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
 RO SE SI

ADT WO 2001028014 A1 WO 2000-US28168 20001012; AU 2000080137 A AU 2000-80137  
 20001012; EP 1230698 A1 EP 2000-970812 20001012, WO 2000-US28168 20001012  
 FDT AU 2000080137 A Based on WO 200128014; EP 1230698 A1 Based on WO 200128014  
 PRAI US 1999-416799 19991013  
 IC ICM H01M004-88  
 ICS H01M012-06

AB WO 200128014 A UPAB: 20010607  
 NOVELTY - The tube is formed by placing **current collector** tube in a **molding cavity** (24) and injecting **cathode** coating mixture from the hopper (10) into the cavity. When the mixture stiffens it forms a seamless **cathode** tube. The **current collector** tube screen tube is wrapped in a microporous membrane prior to its placing into the injection cavity. The mixture can be applied by ram or screw extrusion or injection **molding**

USE - In electrochemical cells.

DESCRIPTION OF DRAWING(S) - The drawing shows an injection **molding** system for seamless **cathode** tubes.  
 hopper 10

**molding cavity** 24

Dwg. 4A/4

FS CPI EPI

FA AB; GI

MC CPI: A11-B05B2; A11-B12A; A12-E11A; L03-C03; L03-E  
 EPI: X16-A01B; X16-D; X16-E06

L33 ANSWER 8 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 2002-358951 [39] WPIX

DWC C2002-101858

TI Process for producing **electrode** plate of lithium secondary battery.

DC A85 L03 X16

IN JANG, Y C

PA (SMSU) SAMSUNG SDI CO LTD

CYC 1

PI KR 2001107374 A 20011207 (200239)\* 1p H01M004-04

ADT KR 2001107374 A KR 2000-28851 20000527

PRAI KR 2000-28851 20000527

IC ICM H01M004-04

AB KR2001107374 A UPAB: 20020621

NOVELTY - Provided is a process for producing an **electrode** plate of a lithium secondary battery, which makes the contact area of an electrolyte and the **electrode** maximize, therefore, the efficiency and the capacity of the battery can be increased.

DETAILED DESCRIPTION - The process comprises the steps of: mixing a powdered **anode** active material (21) such as a lithium composite

oxide or a powdered **cathode** active material(21) such as carbon, a powdered conductive agent(22) such as a carbon black, and a powdered binder(23) such as polyvinylidene fluoride in a mixer(25), wherein the binder(23) has 5-50% smaller particle size than the active material powder; injecting the mixture(24) with a **current collector** into a **mold**(28) and then **heat-pressing** to agglutinate the mixture(24) on the **current collector**

Dwg.1/10

FS CPI EPI

FA AB; GI

MC CPI: A99-A; L03-E01B5

EPI: X16-B01F1; X16-E01E; X16-E02

L33 ANSWER 9 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 2001-377060 [40] WPIX

DNN N2001-276002 DNC C2001-115424

TI **Molded electrode** for use in secondary battery comprises **electrode** material with polymer active material, conductivity-enhancer and plasticizer, **molded** in one piece with **current collector** sheet.

DC A32 A85 L03 X16

IN FUJIWARA, M; HARADA, G; KANEKO, S; KUROSAKI, M; NAKAGAWA, Y; NISHIYAMA, T

PA (NIDE) NEC CORP

CYC 2

PI GB 2355579 A 20010425 (200140)\* 64p H01M010-40

JP 2001118565 A 20010427 (200141) 15p H01M004-02

ADT GB 2355579 A GB 2000-25172 20001013; JP 2001118565 A JP 1999-292537 19991014

PRAI JP 1999-292537 19991014

IC ICM H01M004-02; H01M010-40

ICS H01M004-04

AB GB 2355579 A UPAB: 20010719

NOVELTY - **Molded electrode** comprises an **electrode** material (2) and at least one **current collector** sheet (3). The **electrode** material includes a polymer active material, a conductivity-enhancing agent and a plasticizer, and is **molded** or formed into one piece with the collector sheet.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) A process of forming a **molded electrode** by **hot-pressing**; and

(2) A secondary battery which uses the **molded electrode** as the positive and/or negative **electrode**.

USE - As an **electrode** using a polymer active material in a secondary battery.

ADVANTAGE - The use of **hot-pressing** avoids solvent application, during which the solvent evaporates and often generates cracks in the film. The method also enables a thick film to be formed. The energy density of the battery is enhanced relative to previous devices, since the ratio of active material to **current collector** volume is increased. The plasticizer is chosen to minimize electrical resistance and so maximize power density. Since the **electrode** is not limited to a sheet-type, there is greater scope in battery design.

DESCRIPTION OF DRAWING(S) - The drawing shows a sectional view of a **molded electrode**.

**Electrode** material 2

**Current collector** sheet 3

Terminal 4

Dwg.1/6

FS CPI EPI

FA AB; GI  
 MC CPI: A08-M09A; A08-P01; A09-A03; A11-B01; A12-E06A; L03-E01B  
 EPI: X16-E08A

L33 ANSWER 10 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1999:688985 HCAPLUS  
 DN 131:306129  
 TI Electric double-layer capacitor and its manufacture  
 IN Shibutani, Takashi; Hiratsuka, Kazuya  
 PA Asahi Glass Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM H01G009-058  
 ICS H01G009-016  
 CC 76-10 (Electric Phenomena)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11297579	A2	19991029	JP 1998-99613	19980410
AB	The manufg. method involves the following steps: (1) <b>molding a C-based electrode</b> into a sheet shape, (2) <b>bonding the electrode</b> sheet on a <b>current collector</b> via a conductive adhesive contg. elec. conductive powder, an epoxy resin, a hardening agent, and a solvent with b.p. ltoreq.160.degree., and (3) heating at .gtoreq.150.degree. for hardening and drying the adhesive. Also claimed is the obtained capacitor with good charge/discharge performance for a long period.				
ST	elec double layer capacitor <b>electrode</b> adhesive; epoxy resin				
IT	conductive adhesive <b>electrode</b> capacitor				
IT	Carbon black, uses Epoxy resins, uses RL: DEV (Device component use); USES (Uses) ( <b>bonding of electrode to current collector</b> via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)				
IT	Adhesives (conductive; <b>bonding of electrode to current collector</b> via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)				
IT	Capacitors (double layer; <b>bonding of electrode to current collector</b> via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)				
IT	26402-42-6, Epikote 827-diethylenetriamine copolymer			247139-67-9,	
	Epikote 154-diethylenetriamine copolymer RL: DEV (Device component use); USES (Uses) ( <b>bonding of electrode to current collector</b> via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)				
IT	39152-24-4	73310-55-1	110839-13-9		
	RL: DEV (Device component use); USES (Uses) (hardening agent; <b>bonding of electrode to current collector</b> via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)				
IT	78-93-3, Methyl ethyl ketone, uses	108-10-1, Methyl isobutyl ketone			
	108-38-3, m-Xylene, uses RL: NUU (Other use, unclassified); USES (Uses) (solvent in adhesive; <b>bonding of electrode to</b>				

**current collector** via conductive adhesive contg.  
epoxy in manuf. of elec. double-layer capacitor)

L33 ANSWER 11 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
AN 1999:427148 HCAFLUS  
DN 131:90188  
TI Manufacture of flat sheet **electrode** for secondary battery  
IN Ebine, Yoshiaki  
PA Toyota Central Research and Development Laboratories, Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM H01M004-04  
ICS H01M004-02; H01M004-64; H01M010-38; H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11185736	A2	19990709	JP 1997-364156	19971216
AB	The title <b>electrode</b> is manufd. by the following steps: (1) forming active mass layers on both sides of a metal foil <b>current collector</b> , (2) <b>pressure-molding</b> the resulting <b>current collector</b> sheet, and (3) heating the sheet while applying tension. The obtained sheet <b>electrode</b> has uniform distortion distribution and is esp. useful as a <b>cathode</b> sheet for secondary Li battery.				
ST	sheet <b>electrode</b> uniform distortion battery; <b>cathode</b> sheet manuf lithium battery				
IT	Battery <b>electrodes</b> Heat treatment ( <b>press molding</b> of metal sheet and heating while applying tension in manuf. of flat sheet <b>electrode</b> for battery)				
IT	<b>Molding</b> ( <b>press</b> ; <b>press molding</b> of metal sheet and heating while applying tension in manuf. of flat sheet <b>electrode</b> for battery)				
IT	7429-90-5, Aluminum, processes 7440-50-8, Copper, processes RL: PEP (Physical, engineering or chemical process); PROC (Process) ( <b>current collector</b> ; <b>press molding</b> of metal sheet and heating while applying tension in manuf. of flat sheet <b>electrode</b> for battery)				
IT	39457-42-6, Lithium manganese oxide RL: PEP (Physical, engineering or chemical process); PROC (Process) ( <b>press molding</b> of metal sheet and heating while applying tension in manuf. of flat sheet <b>electrode</b> for battery)				

L33 ANSWER 12 OF 67 JAPIO COPYRIGHT 2002 JPO  
AN 1999-283615 JAPIO  
TI MANUFACTURE OF ELECTRODE FOR NONAQUEOUS ELECTROLYTE **BATTERY**  
IN NAKAZATO DAISUKE; MIYAKI YOUSUKE; MARO HITOSHI  
PA TDK CORP  
PI JP 11283615 A 19991015 Heisei  
AI JP 1998-100002 (JP10100002 Heisei) 19980326  
PRAI JP 1998-100002 19980326  
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999  
IC ICM H01M004-04  
ICS H01M004-62; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a method for industrially preparing an electrode for a nonaqueous electrolyte **battery** with ease in which flexibility of the electrode can be kept and peeling deficiency of an electrode coating film can be eliminated.  
 SOLUTION: Electrode active material and a high **polymeric** material, which substantially does not have a melting point at temperatures of 300&deg;C or lower, are mixed to prepare an electrode coating. The resultant electrode coating is applied onto an electrode **current collector**. The electrode having the resultant coating film formed thereon is dried, followed by heat treatment at temperatures of 300&deg;C or lower for shorter than 30 hours before or after compression **molding**, thus preparing an **electrode** for a nonaqueous electrolyte **battery**. It is preferable that the temperature for the heat treatment should range from 100&deg;C to 300&deg;C and the time therefor should be from 30 minutes to 24 hours.  
 COPYRIGHT: (C) 1999, JPO

L33 ANSWER 13 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1999-219707 JAPIO

TI NONAQUEOUS ELECTROLYTE SECONDARY **BATTERY**

IN INOUE YOSHITO

PA SONY CORP

PI JP 11219707 A 19990810 Heisei

AI JP 1998-19966 (JP10019966 Heisei) 19980130

PRAI JP 1998-19966 19980130

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999

IC ICM H01M004-62

ICS H01M004-02; H01M004-58; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a **battery** with a good discharging characteristic by forming the **battery** with a positive electrode having a positive electrode mix containing  $\text{LiMn}(\text{SB})_2</math> /  $\text{SB}>4</math> /  $\text{SB}>$  and a conductive material, a negative electrode and a nonaqueous electrolyte containing alkaline metal ions, and using the carbon black having the specific iodine adsorption and dibutyl phthalate oil absorption for the conductive material of the positive electrode.  
 SOLUTION: The carbon black having the iodine adsorption of 42 mg/g or below and the dibutyl phthalate oil absorption of 110 ml/100 g or above is used for the conductive material of a positive electrode. The carbon black is 2 wt.% or above of the whole positive electrode mix. Thermal decomposition carbons, coke graphites, glassy carbons, an organic **polymer** compound baked body, carbon fibers or activated carbon can be used for a carbon material. When the carbon material is used for a negative electrode material, a negative electrode mix mixed with the negative electrode material to a binder and a solvent is **molded** into an **electrode** shape, or the negative electrode mix is applied to a **current collector** and dried to manufacture a negative electrode.  
 COPYRIGHT: (C) 1999, JPO$$

L33 ANSWER 14 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1999-213969 JAPIO

TI FLEXIBLE THIN **BATTERY**

IN KAGAWA HIROSHI

PA YUASA CORP

PI JP 11213969 A 19990806 Heisei

AI JP 1998-16274 (JP10016274 Heisei) 19980129

PRAI JP 1998-16274 19980129

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999

IC ICM H01M002-08

ICS H01M004-64; H01M004-66; H01M006-18; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a flexible thin **battery** having high resistance to bending and twisting, high **battery** performance, high storage performance, high safety, and high handling capability.

SOLUTION: A flexible thin **battery** has a negative electrode prepared by arranging a negative active material 2 on a metal foil face serving as a negative electrode **current collector** 1 and covering it with a separator 3 made of a **polymer** solid electrolyte, a positive electrode prepared by arranging a positive active material 6 on a metal foil face serving as a positive electrode **current collector** 5, and a window frame-shaped adhesive 4, and the bonded part of the positive **electrode** periphery bonded with the adhesive 4 and the bonded part of the negative **electrode** periphery bonded with the adhesive 4 are arranged so as to face each other.

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L33 ANSWER 15 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1999-120996 JAPIO

TI MANUFACTURE OF **ELECTRODE**

IN HASHISAKA KAZUHIKO; ADACHI MASAYA; OKA TETSUO

PA TORAY IND INC

PI JP 11120996 A 19990430 Heisei

AI JP 1997-285054 (JP09285054 Heisei) 19971017

PRAI JP 1997-285054 19971017

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999

IC ICM H01M004-04

ICS H01M004-58

AB PROBLEM TO BE SOLVED: To improve the charge and discharge cycle characteristic while keeping a **battery** capacity by setting the thermal treatment temperature of an **electrode** to the melting point of a binder or higher, and using a lithium composite oxide as **electrode** active material.

SOLUTION: In order to prevent the reduction in **battery** capacity by the increase in **electrode** thickness, a thermal treatment is performed prior to the **pressure molding** of the **electrode**. The thermal treatment temperature is set to a temperature higher than the melting point of a binder having satisfactory flowing property, or a temperature higher than the melting point by 20-50deg:C in order to provide satisfactory charge and discharge cycle characteristic by uniformly fitting the binder to an **electrode** active material, a conductive material and a **current collector**. As the positive **electrode** active material, a lithium composite oxide is used, and a transition metal oxide containing an alkali metal, an inorganic compound such as transition metal chalcogen, a conjugate **polymer** such as polyacetylene or polyparaphenylene, a crosslinked **polymer** having a disulfide bond, thionyl chloride or the like is used.

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L33 ANSWER 16 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1999-111266 JAPIO

TI HIGH **POLYMER** ELECTROLYTE SECONDARY **BATTERY**

IN IGUCHI TAKAAKI; KUWANA KOJI

PA YUASA CORP

PI JP 11111266 A 19990423 Heisei

AI JP 1997-266940 (JP09266940 Heisei) 19970930

PRAI JP 1997-266940 19970930

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999

IC ICM H01M004-02

ICS H01M004-58; H01M010-40

AB PROBLEM TO BE SOLVED: To enhance ion conductivity, and improve a high rate characteristic by using a composite particle on which a specific surface area is covered with an inorganic solid electrolyte particle on which a reversibly lithium storable/releasable active material particle has lithium ion conductivity, as a positive electrode.  
SOLUTION: In a positive electrode 2, the positive electrode is formed by hardening a high polymer electrolyte monomer by evaporating an organic solvent after coating a surface of a positive electrode current collecting body 1 by forming it in a slurry shape by adding an electrolyte monomer to a material by mixing a conductive agent and a composite particle on which 5 to 85% of the whole surface of an active material particle is covered with an inorganic solid electrolyte particle by heating/melting lithium cobalt composite oxide as an active material particle and a glass inorganic solid electrolyte as an inorganic solid electrolyte particle. In a negative electrode 4, the negative electrode is formed by press-fitting lithium foil to a surface of a negative electrode current collecting body 3. After a separator 5 is arranged/laminated between the positive electrode and the negative electrode, it is wrapped/fused by an aluminium laminate 6, and a high polymer electrolyte secondary battery is obtained.  
COPYRIGHT: (C)1999,JPO

L33 ANSWER 17 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:115572 HCAPLUS

DN 128:169786

TI Method and apparatus for fuel cell collector manufacture

IN Mizuno, Seiji

PA Toyota Motor Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01M008-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10040937	A2	19980213	JP 1996-209228	19960718
AB	Current collectors for fuel cells are prepd. by press molding collector materials under reduced pressure, and optionally a 2nd press molding in another mold. The app. includes a mold contg. a pressing means and a means for reducing pressure in the mold during pressing. The collector material is preferably graphite.				
ST	fuel cell graphite current collector manuf				
IT	Fuel cell electrodes (method and app. for manuf. of graphite current collectors by pressing under reduced pressure for fuel cells)				
IT	7782-42-5, Graphite, uses RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (method and app. for manuf. of graphite current collectors by pressing under reduced pressure for fuel cells)				

L33 ANSWER 18 OF 67 JAPIO COPYRIGHT 2002 JPO

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

AN 1998-302799 JAPIO  
 TI BINDER FOR NONAQUEOUS **BATTERY** ELECTRODE  
 IN NORITAKE YOSHIKA; ITO NOBUYUKI  
 PA JSR CORP  
 PI JP 10302799 A 19981113 Heisei  
 AI JP 1997-121444 (JP09121444 Heisei) 19970425  
 PRAI JP 1997-121444 19970425  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998  
 IC ICM H01M004-62  
 ICS C08L027-16

AB **PROBLEM** TO BE SOLVED: To provide a nonaqueous **battery** electrode binder capable of maintaining good conductivity of an electrode active material, forming a nonaqueous **battery** electrode excellent in bonding of the electrode active material to a current collecting material and electrolyte-resistance, especially excellent in output characteristic after multicycle of charge and discharge and a long-term storage, by using the aqueous dispersant of a vinylidene fluoride copolymer containing a functional group.  
**SOLUTION:** A vinylidene fluoride copolymer containing a functional group has a vinylidene fluoride unit as an essential constitutional unit, and is composed of a **polymer** containing a functional group. As the functional group, a carboxyl group, amide group and epoxy group is preferably used. Toluene-insoluble matter in the vinylidene fluoride-based **polymer** containing a functional group, is normally 20 to 100 wt.%, and preferably 30 to 74 wt.%. When the toluene-insoluble matter is less than 20 wt.%, a **polymer** flow occurs in a drying process after coating, and an electrode active material is excessively coated to inhibit the conductivity of an electrode, thereby causing possibility of an overvoltage cause.  
 COPYRIGHT: (C)1998,JPO

L33 ANSWER 19 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1998-214641 JAPIO  
 TI RECHARGEABLE LITHIUM ANODE FOR **POLYMER** ELECTROLYTE STORAGE **BATTERY**  
 IN GAUTHIER MICHEL; BELANGER ANDRE; VALLEE ALAIN  
 PA HYDRO QUEBEC  
 PI JP 10214641 A 19980811 Heisei  
 AI JP 1997-322916 (JP09322916 Heisei) 19971125  
 PRAI CA 1996-2191019 19961122  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998  
 IC ICM H01M010-40  
 ICS H01M004-02; H01M004-40

AB **PROBLEM** TO BE SOLVED: To provide a storage **battery** in which the number of cycles obtained in a standard life of the storage **battery** can be substantially increased.  
**SOLUTION:** A rechargeable **battery** is composed of an anode which is made of alkaline metal or malleable alkali metal alloy, one kind or more of **polymer** electrolytes which are alkaline cation conductive and act as a separator, one or more of cathode which are reversible against alkali metal cations, and a **current collector**. Therein, the anode is a thin metal sheet of less than 100 micrometers provided with a passive state film of solid-electrolyte boundary face on the surface thereof which limits reaction between the metal and the **polymer** electrolyte and also can replace lithium ions during a continuous charge and discharge cycle. The **polymer** electrolyte constitutes a mechanical deformation-resistant uniform separator, transfers **pressure** to the **anode**, and produces deformation at a rate of less than 35% of its thickness so as to

resist dendritic stress deformation of the metal of the anode. The separator confines the anode sheet in a predetermined position, and maintains the coupling of the boundary face of the electrolyte during a continuous solution-adhesion cycle.  
COPYRIGHT: (C)1998, JPO

L33 ANSWER 20 OF 67 WPIX (C) 2002 THOMSON DERWENT  
AN 1997-506268 [47] WPIX  
DNN N1997-421694 DNC C1997-161191  
TI **Electrode** for accumulator - has metal base adhered to porous metallic layer contg. active material in pores..  
DC L03 X16  
PA (HITB) HITACHI CHEM CO LTD; (HITA) HITACHI LTD  
CYC 1  
PI JP 09161806 A 19970620 (199747)\* 9p H01M004-70  
ADT JP 09161806 A JP 1995-324590 19951213  
PRAI JP 1995-324590 19951213  
IC ICM H01M004-70  
ICS H01M004-02; H01M004-58; H01M004-66; H01M004-80; H01M010-40  
AB JP 09161806 A UPAB: 19971125  
An **electrode** has a **current collector** obt'd. by adhering a metallic base of two-dimensional structure, to a porous metallic layer, and an agent including a battery active material, is held in the pores of the porous metallic layer.  
ADVANTAGE - A drawing of the **electrode** at **pressure moulding** of the same, and a lowering of the capacity can be reduced.  
Dwg. 0/7  
FS CPI EPI  
FA AB  
MC CPI: L03-E01B8  
EPI: X16-B01; X16-E02

L33 ANSWER 21 OF 67 WPIX (C) 2002 THOMSON DERWENT  
AN 1997-357739 [33] WPIX  
DNN N1997-297073  
TI AC generator e.g. for motor vehicles - incorporates negative **electrode** slide brush which slides in axial direction at end surface of negative **electrode** side slip ring.  
DC X11 X22  
PA (NPDE) NIPPONDENSO CO LTD  
CYC 1  
PI JP 09149603 A 19970606 (199733)\* 15p H02K013-00  
ADT JP 09149603 A JP 1995-303017 19951121  
PRAI JP 1995-303017 19951121  
IC ICM H02K013-00  
ICS H01R039-00; H02K019-22  
AB JP 09149603 A UPAB: 19970813  
The AC generator consists of a negative **electrode** side slip ring (42), which is **press-fitted** at the centre hole (37) formed at the rear end of a shaft (5). A negative **electrode** side brush (52) is directly fixed in the rear housing (12) by means of a rivet (55), which passes through the lower wall (20). The lower wall contains the bearing accommodation part (18). The negative **electrode** side brush slides in the axial direction at the end surface of the negative **electrode** side slip ring.  
The negative **electrode** side slip ring is manufactured using a conductive copper alloy. The **press moulding** of the negative **electrode** side brush is carried out by a phosphor bronze or a beryllium bronze containing spring steel of a copper alloy.

**ADVANTAGE** - Reduces thickness of negative **electrode** side brush. Decreases axial length of shaft. Minimises power loss. Enables miniaturisation. Simplifies configuration of **current collector** and brush device.

Dwg.1/13

FS EPI

FA AB; GI

MC EPI: X11-D; X11-J03; X11-U01A; X11-U01D; X11-U02; X22-F02

L33 ANSWER 22 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1997-515823 (48) WPIX

DNN N1997-429089

TI Solidification process monitoring method for matrix of industrial residues mixed with hydraulic **bonder** - uses **electrodes** connected to control module and current source while microprocessor determines fraction of soluble residues left in matrix.

DC P43 S03

IN BOUCHELAGHEM, A; ERLING, J C

PA (S0LS-N) CIE DU SOL SOC CIV

CYC 1

PI FR 2747195 A1 19971010 (199748)\* 7p G01N027-04

ADT FR 2747195 A1 FR 1996-4350 19960405

PRAI FR 1996-4350 19960405

IC ICM G01N027-04

ICS B09B003-00; G01N027-12

AB FR 2747195 A UPAB: 19971209

The residue matrix (1) is obtained by solidification of a mixture of industrial residues with a liquid hydraulic **bonder** which is poured in a **mould** (2). A number of **electrodes** (4) are placed on the surface of the solid block thus formed. The **electrodes** are placed along a diagonal at equal distances.

A connection cable (5) is linked to an electronic box and a power supply source. The box controls each of the **electrodes** some of which are used as current sources and others as current sensors. A microprocessor (8) **collects** the **current** values and processes information to determine fraction of soluble residues left in the block.

**USE/ADVANTAGE** - For assessing solidification level of residue and **bonder** matrix prior to being disposed of. Is simple and enables continuous monitoring of solidification process without destroying matrix.

Dwg.1/2

FS EPI GMPI

FA AB; GI

MC EPI: S03-E02A

L33 ANSWER 23 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1997-097628 JAPIO

TI NONAQUEOUS ELECTROLYTE LITHIUM SECONDARY **BATTERY**

IN MIURA HITOSHI; TERAHARA ATSUSHI; IWASAKI KATSUHIKO; KAMI KENICHIRO;

YAMAMOTO TAKETSUGU

PA SUMITOMO CHEM CO LTD

PI JP 09097628 A 19970408 Heisei

AI JP 1996-187106 (JP08187106 Heisei) 19960717

PRAI JP 1995-187054 19950724

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997

IC ICM H01M010-40

ICS H01M004-02; H01M004-62

AB PROBLEM TO BE SOLVED: To enhance cycle characteristics and high rate charge/discharge characteristics by containing a **polymer** having carbonate structure represented by the specific general formula and

number-average molecular weight existing in the specified range in a negative electrode in a lithium secondary **battery**.  
**SOLUTION:** In a lithium secondary **battery** having a positive electrode using a material capable of doping/undoping a lithium ion as an active material and a negative electrode using a carbon material capable of doping/undoping a lithium ion as an active material, the negative **electrode** is prepared by **bonding** a mixture of a **polymer** having carbonate structure represented by formula I, and if necessary a suitable binder and a conductive material to a **current collector** sheet by coating or stretching. The **polymer** having a number-average molecular weight of 300-200000 is selected. A graphite base material is preferable to be contained since charge/discharge capacity per weight is high and average potential during charge/discharge is low. A layer lithium composite oxide is preferable from the standpoint of high voltage, high energy density, and excellent cycle characteristics.  
 COPYRIGHT: (C)1997, JPO

L33 ANSWER 24 OF 67 WPIX (C) 2002 THOMSON DERWENT  
 AN 1997-070332 [07] WPIX  
 DNN N1997-058118 DNC C1997-022764  
 TI **Electrode** made of hydrogen storage material - comprises mulling hydrogen storage material powder, thickener and binder into slurry, mixing with porous **current collecting** material and **moulding**.  
 DC A85 L03 X16  
 PA (CHUB) CHUBU DENRYOKU KK, (MITO) MITSUBISHI JUKOGYO KK  
 CYC 1  
 PI JP 08315806 A 19961129 (199707)\* 4p H01M004-24  
 ADT JP 08315806 A JP 1995-119608 19950518  
 PRAI JP 1995-119608 19950518  
 IC ICM H01M004-24  
 AB JP 08315806 A UPAB: 19970212  
 Rechargeable hydrogen storage material powder, thickener and a binder are milled into a slurry-type material, and then the material and a porous **current collecting** material are mixed and **moulded** into the **electrode** by using a **moulding** box.  
 USE - Used for the negative pole of a sec. cell.  
 ADVANTAGE - A cell using the **electrode** has improved running life. The prodn. cost is reduced since the hydrogen storage material is reusable when using an elastomer-type binder.  
 Dwg.1/5  
 FS CPI EPI  
 FA AB; GI  
 MC CPI: A12-E06A; L03-E01B  
 EPI: X16-E05C

L33 ANSWER 25 OF 67 WPIX (C) 2002 THOMSON DERWENT  
 AN 1996-314468 [32] WPIX  
 DNN N1996-264628 DNC C1996-099931  
 TI Mfr. of alkaline sec. battery - by filling **current collector** with paste contg. nickel hydroxide powder, drying, **pressurising** and **moulding**.  
 DC L03 X16  
 PA (RAYN) TOSHIBA BATTERY CO LTD  
 CYC 1  
 PI JP 08138662 A 19960531 (199632)\* 6p H01M004-26  
 ADT JP 08138662 A JP 1994-272581 19941107  
 PRAI JP 1994-272581 19941107

IC ICM H01M004-26  
ICS H01M004-64; H01M010-30  
AB JP 08138662 A UPAB: 19960819  
Prodn. of battery comprises filling a **current collector**  
with paste contg. nickel hydroxide powder, drying the **collector**  
and **pressurising and moulding the collector**  
so that the Vicker's hardness on the surface of the collector becomes 50  
to 250 HV to form a positive **electrode**.

ADVANTAGE - A paste nickel positive **electrode** having  
uniform charging density of active materials can be obtd. and the using  
rate of the positive **electrode** and charge/discharge cycle of the  
battery can be improved.

Dwg. 1/6

FS CPI EPI

FA AB; GI

MC CPI: L03-E01B4

EPI: X16-B01A; X16-E05

L33 ANSWER 26 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1995-157002 [21] WPIX

DNN N1995-123676 DNC C1995-072272

TI Preparation of nickel hydroxide for nickel **electrode** for  
secondary battery - by dissolving ions of other metals than nickel in  
nickel hydroxide, then eluting partial amount of ions from hydroxide,  
filling porous **current collector** with active material  
paste of resulting hydroxide.

DC A85 L03 X16

IN IWANE, N; SAWA, H

PA (FURB) FURUKAWA DENCHI KK; (FURB) FURUKAWA BATTERY CO LTD; (FURU) FURUKAWA  
ELECTRIC CO LTD

CYC 5

PI EP 650207 A1 19950426 (199521)\* EN 10p H01M004-52

R: DE FR GB

JP 07122271 A 19950512 (199528) 5p H01M004-32

US 5549992 A 19960827 (199640) 8p H01M004-02

EP 650207 B1 19980429 (199821) EN 13p H01M004-52

R: DE FR GB

DE 69409909 E 19980604 (199828) H01M004-52

ADT EP 650207 A1 EP 1994-116554 19941020; JP 07122271 A JP 1993-266544  
19931025; US 5549992 A US 1994-320863 19941011; EP 650207 B1 EP  
1994-116554 19941020; DE 69409909 E DE 1994-609909 19941020, EP  
1994-116554 19941020

FDT DE 69409909 E Based on EP 650207

PRAI JP 1993-266544 19931025

REP 01Jnl.Ref. EP 271043; EP 337029; EP 353837; EP 544011; JP 04337246

IC ICM H01M004-02; H01M004-32; H01M004-52

ICS H01M010-30

AB EP 650207 A UPAB: 19950602

The method involves dissolving ions of other metals from the group  
consisting of one metal selected from Zn, Cd, Mg, Ca, Mn, Co, Cu and Al.  
The elution process is carried out using an alkaline aqueous solution. The  
weight of the metal ions remaining in the nickel hydroxide after the  
elution process is 5 percent less of the weight of the nickel hydroxide.

The conductive material is a material selected from a group of nickel  
powder, cobalt powder and cobalt oxide powder. The **current**  
**collector** is a spongy expanded nickel. A PTFE binder and an aq.  
soln. of CMC as thickener are used with Ni hydroxide and conductive  
material to form the active material paste.

ADVANTAGE - Restrains deformation of expansion of the nickel  
**electrode** and lowers the discharge capacity of the battery despite

repeated charge and discharge of the battery.  
 Dwg. 3/3  
 FS CPI EPI  
 FA AB; GI  
 MC CPI: A03-A04A; A04-E08; A12-E06; L03-E01B4  
 EPI: X16-B01A; X16-E01G

L33 ANSWER 27 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1994-290790 JAPIO  
 TI MANUFACTURE OF CURRENT-COLLECTING ELECTRODE  
 FOR LAYER-BUILT CELL  
 IN ITO HIROMICHI; HASHIGUCHI YUJI  
 PA MEIDENSHA CORP  
 PI JP 06290790 A 19941018 Heisei  
 AI JP 1993-76051 {JP05076051 Heisei} 19930402  
 PRAI JP 1993-76051 19930402  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994  
 IC ICM H01M004-88  
 ICS H01M004-96; H01M012-08  
 AB PURPOSE: To manufacture a current-collecting  
 electrode for a layer-built cell which can considerably lessen  
 warp of its molding.  
 CONSTITUTION: In manufacturing a current-collecting  
 electrode press-molding, a current-  
 collecting wire netting 22 is sandwiched in carbon plastic  
 plates 21a, 21b and the two are mutually heat attached and a  
 current-collecting terminal 24 is led out from the  
 middle of the current-collecting wire netting 22 to  
 the rear surface (the side 21b of the carbon plastic plate).  
 Molten resin (glass fiber-reinforced polyethylene) is poured in the side  
 periphery (tl portion) of the current-collecting  
 electrode press-molding and in the rear  
 periphery (t3 portion), using a metal mold or the like so that  
 an insulating frame 30 is formed. In the rear surface of the press  
 -formed current-collecting electrode, molten  
 resin is thus placed only on the outer periphery of small width, so that  
 no warping occurs due to resin contraction.  
 COPYRIGHT: (C)1994,JPO

L33 ANSWER 28 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1994-036807 JAPIO  
 TI MANUFACTURE OF CURRENT COLLECTING ELECTRODE  
 OF ZINC-BROMINE BATTERY  
 IN ANDO YASUO; JINNAI KENICHIRO; HOSONO HIROSHI; YOSHIOKA YASUHIRO; NAMIKI  
 YASURARU  
 PA MEIDENSHA CORP  
 PI JP 06036807 A 19940210 Heisei  
 AI JP 1992-191787 {JP04191787 Heisei} 19920720  
 PRAI JP 1992-191787 19920720  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994  
 IC ICM H01M012-08  
 ICS H01M004-96  
 AB PURPOSE: To provide a manufacturing method of a current  
 collecting electrode of a zinc-bromine battery, with  
 which a factor of inducing an inferior characteristic such as liquid  
 leakage of an electrolyte by improving the flatness as well as the  
 smoothness of the current collecting electrode  
 , and whereby improving the performance of the battery.  
 CONSTITUTION: A current collecting part 18 is formed  
 out of a current collecting mesh 6 that is sandwiched

and fixed in a carbon plastic by electrode 15, by a heat pressing means. An insulating frame 16 is formed, on which a recessed part 17 having a specific area and depth is formed on the flat center part in one side, by an injection molding means. A current collecting electrode 7 is formed by fitting the current collecting part 18 into the recessed part 17 of the insulating frame 16 and by thermally welding it.  
COPYRIGHT: (C)1994,JPO&Japio

L33 ANSWER 29 OF 67 JAPIO COPYRIGHT 2002 JPO  
AN 1993-047420 JAPIO  
TI NONAQUEOUS ELECTROLYTE SECONDARY BATTERY  
IN FUJIMOTO MASAHISA; YOSHINAGA NORIYUKI; FURUKAWA SANEHIRO  
PA SANYO ELECTRIC CO LTD  
PI JP 05047420 A 19930226 Heisei  
AI JP 1991-208168 (JP03208168 Heisei) 19910820  
PRAI JP 1991-208168 19910820  
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993  
IC ICH H01M010-40  
ICS H01M004-02; H01M004-58  
AB PURPOSE: To enhance energy density per weight by using a specific conductive polymer as a positive electrode.  
CONSTITUTION: A negative electrode 1 is press-fitted to a negative electrode current collector 3 fixed to the inner bottom surface of a negative can 2. A positive electrode 4 is press-fitted to a positive electrode current collector 6 secured to the inner bottom surface of a positive electrode can 5. An electrolyte including trifluoromethane sulfonate lithium dissolved in propylene carbonate is impregnated in a separator 7. A conductive polymer doped with a magnitude anion having an ion formula weight larger than that of a perchloric acid ion is used as the positive electrode 4. A specific gravity of the polymer is about 1, that is, it is much lighter than a metal oxide conventionally used as a positive electrode active material. A capacity of the polymer is 200mAh/g or larger, which is equal to or larger than that of the metal oxide. Furthermore, an operating voltage is as high as 3V or more. Consequently, it is possible to enhance energy density of a battery per weight.  
COPYRIGHT: (C)1993,JPO&Japio

L33 ANSWER 30 OF 67 WPIX (C) 2002 THOMSON DERWENT  
AN 1991-059623 [09] WPIX  
DNN N1991-046188  
TI Back-up power supply double layer capacitor for memory - comprises two polarised electrodes each comprising porous sintered and joined fine particles of activated carbon.  
DC V01 X16  
IN KURABAYASHI, K; TSUCHIYA, Y; KURABAYASHI, K  
PA (ISUZU) ISUZU MOTORS LTD  
CYC 11  
PI EP 414420 A 19910227 (199109)\*  
R: DE FR GB IT NL  
CA 2020547 A 19910223 (199118)  
JP 03078221 A 19910403 (199120)  
CN 1049746 A 19910306 (199145)  
US 5136472 A 19920804 (199234) 11p H01G009-02  
EP 414420 A3 19920401 (199328)  
CA 2020547 C 19941129 (199503) H01G004-08  
EP 414420 B1 19941214 (199503) EN 12p H01G009-00  
R: DE FR GB IT NL

DE 69015053 E 19950126 (199509) H01G009-00  
 CN 1024725 C 19940525 (199529) H01G009-00  
 ADT EP 414420 A EP 1990-308781 19900809; JP 03078221 A JP 1989-215277  
 19890822; US 5136472 A US 1990-550170 19900709; EP 414420 A3 EP  
 1990-308781 19900809; CA 2020547 C CA 1990-2020547 19900705; EP 414420 B1  
 EP 1990-308781 19900809; DE 69015053 E DE 1990-615053 19900809, EP  
 1990-308781 19900809; CN 1024725 C CN 1990-107306 19900822

FDT DE 69015053 E Based on EP 414420

PRAI JP 1989-215277 19890822

REP NoSR.Pub; 4.Jnl.Ref; DE 3530772; DE 3801719; EP 212572; JP 55113850; JP  
 60189162; JP 62052115; JP 62292612

IC ICM H01G004-08; H01G009-02

ICS H01G004-20

AB EP 414420 A UFAB: 19931116

The capacitor has two polarised **electrodes** (32) separated by an electrolyte impregnated separator (33). A non-conductive plastic gasket (34) is attached to the **current collectors** (31) to form a double layer capacitor. The collectors are made of electrically conductive plastic and are thermally fused to the **electrodes**.

The polarised **electrodes** are pre-manufactured by placing powder of fine particles of activated carbon in a sintering mould. A switch-controlled charged capacitor circuit is connected to the **mould via electrodes**. Sharp pulses are applied to the **mould** until the fine particles are stably bonded to each other.

ADVANTAGE - Greater electrostatic capacitance per unit volume. Lower internal resistance. Does not require **pressure**. Simple construction. @ (11pp Dwg.No.9/11)@

9/11

FS EPI

FA AB; GI

MC EPI: V01-B01A; V01-B01D; V01-B01X; X16-L02

L33 ANSWER 31 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1991-081955 JAPIO

TI MANUFACTURE OF POSITIVE ELECTRODE PART OF **BATTERY**

IN YAMAMOTO KOHEI; HINO YOSHIHISA; HARADA YOSHIRO; TANAKA YUZO

PA FUJII ELELCTROCHEM CO LTD

PI JP 03081955 A 19910408 Heisei

AI JP 1989-216144 (JP01216144 Heisei) 19890824

PRAI JP 1989-216144 19890824

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991

IC ICM H01M004-08

ICS H01M006-16

AB PURPOSE: To reduce the thickness of a pos. electrode part to a great extent by making a **current collector** from an Al foil with ample ductility, and forming a pos. electrode black mix in such a composition as attaching to the Al foil.

CONSTITUTION: As pos. electrode active substance is used vanadium pentoxide  $V<SB>2</SB>O<SB>5</SB>$ , and 2 thru 15 parts electroconductive agent is mixed with 100 parts  $V<SB>2</SB>O<SB>5</SB>$ . These pos. electrode black mix, electroconductive agent, a small amount of binder, **plasticizer**, and solvent are mixed together and shaped into a sheet by extrusion molding. The solvent, binder, and **plasticizer** are pyrolyzed by raising the temp. in steps at the driving process, and a sheet from black mix for pos. electrode is achieved. This is attached by **pressure** to a pos. **electrode current collector** consisting of Al foil. The thickness of this Al foil shall be below  $50\mu\text{m}$ .

COPYRIGHT: (C)1991,JPO&Japio

L33 ANSWER 32 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1991-043956 JAPIO  
 TI MANUFACTURE OF **CURRENT COLLECTING ELECTRODE**  
 FOR STACKED CELL  
 IN ANDO YASUO  
 PA MEIDENSHA CORP  
 PI JP 03043956 A 19910225 Heisei  
 AI JP 1989-178828 (JP01178828 Heisei) 19890711  
 PRAI JP 1989-178828 19890711  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991  
 IC ICM H01M004-00  
 ICS H01M012-08  
 AB PURPOSE: To ensure melt-bonding with an insert and to prevent electrolyte leakage from the interface by injecting molten **plastic** from a gate arranged in a part corresponding to the back side of an **electrode** accommodated in the **molding** space of a **mold** for insert injection **molding**.  
 CONSTITUTION: A gate 33 positioned in a part corresponding to a thick part 31a of an insulating frame 31 is replaced with a gate 37 positioned in a part corresponding to the back side of an **electrode** 30. When molten **plastic** is injected from the gate 37, high temperature molten **plastic** is directly brought into contact with the **electrode** 30 before it is cooled in a **molding** space 36, and strongly **bonded** to the **electrode** 30 to form an insulating frame 31 serving as a **current collecting electrode**. When the **current collecting electrode** is used as the end plate **electrode** for assembling a stack, electrolyte leakage is avoided.  
 COPYRIGHT: (C)1991,JPO&Japio

L33 ANSWER 33 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1990-129851 JAPIO  
 TI SECONDARY **BATTERY** AND ELECTRODE FOR SECONDARY **BATTERY** AND MANUFACTURE THEREOF  
 IN MIYAZAKI KAZUHIRO; KATO KAZUHIKO; MOTOMURA TOMOTAKA  
 PA MITSUI MINING & SMELTING CO LTD  
 PI JP 02129851 A 19900517 Heisei  
 AI JP 1988-280458 (JP63280458 Showa) 19881108  
 PRAI JP 1988-280458 19881108  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990  
 IC ICM H01M004-02  
 ICS H01M004-04; H01M010-40  
 AB PURPOSE: To remarkably increase capacity per weight and to prevent separation of a highly conductive **polymer** film by using an **electrode** prepared by stacking an electrolytic deposition film of conductive polyaniline resin, conductive polyaniline resin, and a **current collector**.  
 CONSTITUTION: An **electrode** prepared by stacking an electrolytic deposition film of conductive polyaniline resin, conductive polyaniline resin, and a **current collector** is used for a secondary **battery**. The **electrode** is prepared by **molding** a conductive polyaniline thin film obtained by electrolytic **polymerization** containing a dopant and a **current collector** with a solution containing conductive polyaniline resin containing a dopant without using a binder. Since the **electrode** holds the structure of highly conductive polyaniline resin, electrical capacity per weight is remarkably increased. Since it is molded through no binder, high conductivity, high adhesion, and suitable softness are obtained.  
 COPYRIGHT: (C)1990,JPO&Japio

L33 ANSWER 34 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1989-093053 JAPIO  
 TI ELECTRODE FOR BATTERY  
 IN OSAWA TOSHIYUKI; KIMURA OKITOSHI; KAHATA TOSHIYUKI; KONO MICHIOYUKI; ISA TAKUMI; FUKUDA MINORU  
 PA RICOH CO LTD  
 JAPAN CARLIT CO LTD:THE  
 PI JP 01093053 A 19890412 Heisei  
 AI JP 1987-248092 (JP62248092 Showa) 19871002  
 FRAI JP 1987-248092 19871002  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989  
 IC ICM H01M004-02  
 ICS H01M004-66  
 AB PURPOSE: To make the discharge voltage of an electrode flat, to lengthen the life of a **battery**, and to increase energy density by forming a metal oxide film on a metallic **current collector**, and **bonding an electrode** active material thereon to form an electrode.  
 CONSTITUTION: An aluminium foil is used as the metal for a **current collector**, and it is immersed in an electrolyte containing acid, then voltage is applied thereto to make the surface rough. The foil is anodically oxidized in an electrolyte such as ammonium adipate aqueous solution to form an oxide layer, then immersed in peroxide such as ammonium persulfate, and treated with the monomer of conductive **polymer** to form a chemically oxidized **polymerization** film on the oxide layer, then electrolytical **polymerization** is conducted in an electrolyte containing an organic solvent to form an electrolytically oxidized **polymerization** film thereon. By producing the electrode by forming a metal oxide layer on the **current collector**, the flatness of discharge voltage is increased, the life of a **battery** is lengthened, and energy density is increased.  
 COPYRIGHT: (C)1989,JPO&Japio

L33 ANSWER 35 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1989:26679 HCAPLUS  
 DN 110:26679  
 TI Hydrogen-storage alloy **anode** and its manufacture  
 IN Mitsuyasu, Kiyoshi; Kanda, Motoya; Takeno, Kazuta; Kochiwa, Kenichi  
 PA Toshiba Corp., Japan; Toshiba Battery Co., Ltd.  
 SO Eur. Pat. Appl., 10 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM H01M004-00  
 ICS H01M004-62  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38, 56  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 284063	A1	19880928	EP 1988-104735	19880324
	EP 284063	B1	19920129		
	R: DE, FR, GB				
	JP 64000649	A2	19890105	JP 1988-60441	19880316
	US 4849312	A	19890718	US 1988-171815	19880322
FRAI	JP 1987-69225		19870325		
	JP 1988-60441		19880316		
AB	The <b>anode</b> is prep'd. from a mixt. of 100 parts powd. H-storage				

alloy, an elec. conducting powder, and a polymer binder of 0.1-0.8 poly(acrylic acid salt) and 0.5-4 parts PTFE. The d. of the H-storage alloy is .gtoreq.4.0 g/cm3 and the alloy powder is coated with a poly(acrylic acid salt) whose 3-dimensional reticulate mol. chain was partly severed by high-speed stirring. The paste is coated on a **current collector**, dried, and **pressure molded**. Powd. LaNi4.7Al0.3 (100 g, 20 .mu.m) was mixed with 0.1 or 0.5 g Na polyacrylate, C, 1.65 mL PTFE dispersion, water, and optionally with 0.5 g CMC or 0.5 g poly(vinyl alc.), or 0.25 g CMC and 0.25 g poly(vinyl alc.), and the mixt. was stirred at a high speed. Punched metal collectors were coated with the prepd. pastes, dried in 80.degree. air, and roll **pressed** until **current collector** was stretched 20% in length. The obtained **anodes** had higher strength than **anodes** using pastes contg. less amt. of Na polyacrylate and/or PTFE.

ST battery **anode** hydrogen storage; sodium polyacrylate PTFE hydrogen **anode**; lanthanum nickel aluminum hydrogen **anode**

IT **Anodes**  
(battery, hydrogen-absorbing aluminum lanthanum nickel alloy, contg. PTFE and sodium polyacrylate binders)

IT 1333-74-0, Hydrogen, uses and miscellaneous  
RL: USES (Uses)

(aluminum lanthanum nickel alloy contg. absorbed, **anodes**, PTFE and sodium polyacrylate binders in, for batteries)

IT 9003-04-7, Sodium polyacrylate  
RL: USES (Uses)

(binders, **anodes** contg. PTFE and, hydrogen-absorbing alloy, for batteries)

IT 9002-84-0, PTFE  
RL: USES (Uses)

(binders, **anodes** contg. sodium polyacrylate and, hydrogen-absorbing alloy, for batteries)

IT 82089-05-2, LaNi4.7Al0.3  
RL: USES (Uses)

(hydrogen-absorbing, **anodes**, PTFE and sodium polyacrylate binders in, for batteries)

L33 ANSWER 36 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1988-245871 JAPIO

TI SOLID ELECTROCHEMICAL ELEMENT AND MANUFACTURE THEREOF

IN KONDO SHIGEO; TONOMURA TADASHI

PA MATSUSHITA ELECTRIC IND CO LTD

PI JP 63245871 A 19881012 Showa

AI JP 1987-263457 (JP62263457 Showa) 19871019

PRAI JP 1986-263408 19861105

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988

IC ICM H01M010-36

ICS H01G009-00; H01M004-02

AB PURPOSE: To obtain a solid electrochemical element having flexibility sufficiently bearable to mechanical impact by using material consisting of solid electrolyte and **electrode** material enclosed by plastic resin as components.

CONSTITUTION: Plastic resin 3 is dry- or wet-mixed with solid electrolyte grains 1 and **electrode** material grains 2 in a proper ratio respectively, and the surface of the grains 1, 2 is completely covered with the plastic resin 3. Then this mixture is **pressure molded** into a proper form by means of a **press** or the like while being heated if necessary. Molded bodies of **electrode** material A, C are **pressure molded** again with a thus **molded** solid electrolyte

**molded** body B between them to be integrated with other components of an element such as **current collecting** bodies 4, etc., if necessary. By this, a solid electrochemical element having a mechanically strong flexibility which is less likely to be affected by oxygen, moisture, etc., can be obtained.

COPYRIGHT: (C)1988,JPO&Japio

L33 ANSWER 37 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1986-128462 JAPIO  
 TI MANUFACTURE OF HYDROGEN ABSORPTION **ELECTRODE**  
 IN YANAGIHARA NOBUYUKI; KAWANO HIROSHI; IKOMA MUNEHISA  
 PA MATSUSHITA ELECTRIC IND CO LTD  
 FI JP 61128462 A 19860616 Showa  
 AI JP 1984-250835 (JP59250835 Showa) 19841128  
 PRAI JP 1984-250835 19841128  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986  
 IC ICM H01MD04-26  
 AB PURPOSE: To simplify the manufacture of a hydrogen absorption **electrode** by activating a hydrogen absorption alloy having high equilibrium **pressure** and hydrogenating a hydrogen absorption alloy having low equilibrium **pressure** within a sealed container in which hydrogen **pressure** can be controlled.  
 CONSTITUTION: A hydrogen absorption alloy which electrochemically absorbs and desorbs hydrogen in an alkaline solution is used for a negative **electrode** as hydrogen absorption **electrode**. Two or more kinds of hydrogen absorption alloy powder having different hydrogen equilibrium **pressure** are placed in a sealed container. The hydrogen atmosphere in the container is controlled higher than hydrogen absorption **pressure** of the hydrogen absorption alloy having low hydrogen equilibrium **pressure** and lower than hydrogen absorption **pressure** of the hydrogen absorption alloy having high hydrogen equilibrium **pressure** to perform hydrogenation and activation respectively. An alkali resistant **polymer** binder is added to the alloy powder, then they are **molded** together with a **current collector**. Thereby, the high performance **electrode** is obtained and the manufacturing process is simplified and the cost is reduced.

COPYRIGHT: (C)1986,JPO&Japio

L33 ANSWER 38 OF 67 WPIX (C) 2002 THOMSON DERWENT  
 AN 1985-249283 [40] WPIX  
 DNN N1985-186442 DNC C1985-108184  
 TI Second-order **electrode current collector**  
 prodn. - from mass of silver particles, coated with silver chloride and gelatin or poly-N-vinyl pyrrolidone, and acrylic copolymer.  
 DC A89 J04 P31 S03 S05  
 IN MIKITJUK, I M; SMERDOVAA; TISCHENKO, A G; VOLZHENSKY, D S; ZABEGLOVSK, I S  
 PA (RADI-R) RADIOELTRN MED EQUI; (REMA-R) REMA RADIOELTRN MED  
 CYC 5  
 PI WO 8504253 A 19850926 (198540)\* RU 31p  
 W: DE GB HU JP SE  
 SE 8505192 A 19851104 (198604)  
 DE 3490675 T 19860403 (198615)  
 GB 2166553 A 19860508 (198619)  
 HU 39017 T 19860728 (198635)  
 JP 61501524 W 19860724 (198636)  
 GB 2166553 B 19880113 (198802)  
 DE 3490675 C 19880407 (198814)  
 SE 460624 B 19891030 (198946)  
 ADT WO 8504253 A WO 1984-SU17 19840321, DE 3490675 T DE 1984-3490675 19840321,

GB 2166553 A GB 1984-26416 19840321; JP 61501524 W JP 1984-503048 19840321  
 PRAI WO 1984-SU17 19840321  
 REP SU 500897; SU 558620; US 3834373  
 IC A61B005-04; G01N027-30  
 AB WO 8504253 A UPAB: 19930925

The **current collector** is formed from a homogeneous mass of 70-100 (pref. 70-95, more pref. 75-85) wt.% of galvanically treated Ag particles (I) and pref. 5-30 (more pref. 15-25) wt.% rapid-hardening acrylic copolymer. (I) is obtd. by galvanically coating Ag particles with AgCl and gelatin or poly-N-vinyl-pyrrolidone in an Ag: AgCl: gelatin or polymer wt. ratio of 69-97.9:2-30: 0.1-1, pref. 81.9-84.15:18:0.1-1.

Acrylic copolymer is a finely dispersed copolymer of (m)ethyl methacrylate esters and a fluoro-rubber, opt. in suspension form.

Typically Ag particles are galvanically chlorinated in the presence of gelatin or poly-N-vinyl-pyrrolidone; a homogeneous mass is then formed of the above compsn., shaped and hardened in the presence of stabilised methyl methacrylate. The mass is pref. shaped at 0.3-100 MPa pressure.

USE/ADVANTAGE - In cells for bio-potential measurement, e.g. electro-cardiographic, electro-encephalographic etc. testing; and also in pH meters. It has highly stable and reproducible characteristics, high durability and low cost.

O/O

FS CPI EPI GMPi

FA AB

MC CPI: A03-C01; A04-D05; A04-F06B; A12-E09; A12-L04; A12-V03C; J04-B01  
 EPI: S03-E03C; S05-D01A

L33 ANSWER 39 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1985-248902 [40] WPIX

DNN N1985-186207 DNC C1985-107956

TI Cermet **electrode** for electrolytic cell, pref. hall heroult cell  
 - is prepd. by cold isostatic moulding cermet onto  
**current collector** then hot isostatic pressing.

DC L03 M28 X25

IN CLARK, J M; LONDON, T E; SECRIST, D R

PA (GREL) GREAT LAKES CARBON CORP

CYC 1

PI US 4541912 A 19850917 (198540)\* 4p

ADT US 4541912 A US 1983-560456 19831212

PRAI US 1983-560456 19831212

IC B29F005-00; C04B035-00; C25B011-02

AB US 4541912 A UPAB: 19930925

A cermet **electrode** assembly for an electrolytic cell is prepd. by (a) cold isostatic moulding at least one layer of cermet material onto part of a metal **current collector**; and (b) hot isostatic pressing in a O<sub>2</sub>-free atmos. to sinter the cermet and bond it to the **current collector**.

USE/ADVANTAGE - The **electrodes** are useful for electrolytic processes including electrowinning metals from molten salts, esp. in a Hall-Heroult cell (claimed), aq. electrolysis, and/or electrolytic prodn. or refining of e.g. Mg, Cu, Zn, Na, Cl, NaOH, Ag, Au, Pt. The cermet portion is impervious and may be made up to several in. thick to provide long service life. The **electrode** can be foremed in complex shapes, and processing time is shorter than for conventional sintering.

O/O

FS CPI EPI

FA AB

MC CPI: L02-J01B; L03-A01A; L03-A02; M22-H03F; M28-C

EPI: X25-R01B; X25-R02

L33 ANSWER 40 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1985:429214 HCAPLUS  
 DN 103:29214  
 TI Nonaqueous electrolyte battery  
 PA Seiko Instruments and Electronics, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM H01M004-06  
 ICS H01M002-20  
 CC 72-3 (Electrochemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59224059	A2	19841215	JP 1983-99015	19830603
AB	A Li-MnO <sub>2</sub> nonaq. battery is described which has the MnO <sub>2</sub> contg. a current collector of metal powder <b>pressure molded</b> before installing in the cathode can in order to prevent warping of the cathode by the current collector. The Li anode is <b>pressed</b> and fixed to the anode current collector which is fixed to the anode can by spot welding. A separator of nonwoven fabric impregnated with the nonaq. electrolyte is placed between the anode and cathode.				
ST	lithium manganese oxide nonaq battery; cathode battery warping prevention				
IT	Batteries, primary (lithium-manganese dioxide, nonaq. electrolyte)				
IT	Cathodes (battery, manganese dioxide, warping prevention of)				
IT	7439-93-2, uses and miscellaneous RL: USES (Uses) (anode, in nonaq. electrolyte battery with manganese dioxide)				
IT	1313-13-9, uses and miscellaneous RL: USES (Uses) (cathode, in nonaq. electrolyte battery with lithium, warping prevention of)				

L33 ANSWER 41 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1984:519346 HCAPLUS  
 DN 101:119346  
 TI Nonaqueous battery  
 PA Toshiba Battery Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC H01M006-14  
 CC 72-3 (Electrochemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59035363	A2	19840227	JP 1982-144062	19820820
AB	A C fiber cathode current collector for a nonaq. battery is prepd. by molding C fiber (0.2 mm length and 13 .mu.m diam. in a paste with CM-cellulose) into a cylinder and then heating in a N atm. to form a C fiber mold. This C fiber				

**cathode current collector**, having uniform porosity, low elec. resistance, a moisture content <0.02%, and good electrochem. activity, is used in a Li battery with a separator.

ST carbon fiber **cathode current collector**;  
 nonaq battery lithium carbon fiber

1T Carbon fibers  
 RL: USES (Uses)  
 (cathode current collector, for lithium nonaq. battery)

IT Batteries, primary  
 (nonaq., lithium, with carbon fiber molded current collector)

IT Cathodes  
 (battery, molded carbon fiber current collector)

IT 9004-32-4  
 RL: PRP (Properties)  
 (molding carbon fiber paste with, for cathode current collector for lithium nonaq. battery)

L33 ANSWER 42 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1984:519345 HCAPLUS  
 DN 101:119345  
 TI Lithium battery **anode**  
 PA Matsushita Electric Industrial Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC H01M004-12  
 CC 72-3 (Electrochemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59031562	A2	19840220	JP 1982-140606	19820812
AB	Li metal is <b>molded</b> into a cylinder by extruding from a circular nozzle, and then a <b>current collector</b> bar is <b>pressed</b> into the cylinder. The contact resistance is decreased by making the outer diam. of the <b>current collector</b> bar the same or slightly larger than the inner diam. of the Li cylinder.				
ST	lithium <b>molded battery anode</b> ; <b>current collector molded lithium anode</b>				
IT	<b>Anodes</b> (battery, lithium, <b>molded cylinder with inner current collector</b> )				
IT	7439-93-2, uses and miscellaneous RL: USES (Uses) (anode, battery, <b>molded cylinder with inner current collector</b> )				

L33 ANSWER 43 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1985:194044 HCAPLUS  
 DN 102:194044  
 TI Hydrogen chloride electrolyzer with a unitary membrane-electrode structure with discrete **anode** projections

IN Balco, Edward N.  
 PA General Electric Co., USA  
 SO Can., 25 pp.  
 CODEN: CAXXA4  
 DT Patent

LA English  
 IC ICM C25B001-24  
 CC 72-9 (Electrochemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1179631	A1	19841218	CA 1981-382438	19810724
AB	Method and app. are described for electrolyzing aq. halides in which coevolution of O at the <b>anode</b> is minimized while operating at temps. which maximize the cell efficiency. These cells have <b>anodes</b> and <b>cathode</b> bonded to the ion-exchanging membranes (Nafion 120). The <b>anodes</b> are particulate masses of temp.-stabilized reduced oxides of Pt metals e.g. Ir and Ru mixed with PTFE particles. The <b>cathodes</b> are Pt black/PTFE mixts. and Nb <b>anode</b> collector screens are provided. Other <b>current collectors</b> are made of compression molded graphite and Kynar.				
ST	halide electrolysis halogen prodn; hydrochloric acid electrolysis chlorine prodn				
IT	Electrolytic cells (diaphragm, for hydrochloric acid electrolysis)				
IT	7782-42-5, uses and miscellaneous RL: USES (Uses) ( <b>anodes</b> for Kynar and, for hydrochloric acid electrolysis)				
IT	24937-79-9 RL: PRP (Properties) ( <b>anodes</b> from graphite and, for hydrochloric acid electrolysis)				
IT	7440-03-1, uses and miscellaneous RL: USES (Uses) ( <b>anodes</b> , for hydrochloric acid electrolysis)				
IT	7440-06-4, uses and miscellaneous RL: USES (Uses) ( <b>anodes</b> , iridium oxide/ruthenium oxide-coated, for hydrochloric acid electrolysis)				
IT	11113-84-1 12645-46-4 RL: PRP (Properties) (coatings, on platinum <b>anodes</b> , for hydrochloric acid electrolysis)				
IT	7647-01-0, reactions RL: RCT (Reactant) (electrolysis of, unitary membrane- <b>electrode</b> cell for)				
IT	63346-31-6 RL: PRP (Properties) (membranes, in cell for hydrochloric acid electrolysis)				
L33	ANSWER 44 OF 67 WPIX (C) 2002 THOMSON DERWENT				
AN	1984-089695 [15] WPIX				
DNN	N1984-066920 DNC C1984-038055				
TI	Coating carbon fibre, felt or <b>moulding</b> with metal carbide - of Gp-IV Gp-V, or Gp-VI transition metal by meniscus process using lead or zinc alloy melt.				
DC	L02 M22 P42 P73 X16				
IN	KUGLER, T, VIRE, S				
PA	(SWAL) SCHWEIZ ALUMINIUM AG				
CYC	3				
PI	DE 3331698	A	19840405 (198415)*	16p	
	FR 2533913	A	19840406 (198419)		
	NL 8303322	A	19840501 (198422)		
ADT	DE 3331698 A DE 1983-3331698 19830902; FR 2533913 A FR 1983-15804				

- 19831004; NL 8303322 A NL 1983-3322 19830928  
 PRAI CH 1982-5818 19821004  
 IC B05D001-12; B32B007-02; C04B035-56; C04B041-06; C23C001-00; C23C007-00; C23C009-00; C23C017-00; C25B011-00; C25C003-12; H01M004-14  
 AB DE 3331698 A UPAB: 19930925  
 Coating carbon component with a thin film of a carbide of gp. IVB, VB and/or VIB metal(s) is carried by a meniscus process using an alloy based on Pb, Zn, Pb-Zn or Zn-Al and contg. 0.1-10wt.% gp. IVB, VB and/or VIB metal(s) by heating 0.1-30 min. at 700-1100 deg. C to form a wettable electroconductive film on the component.  
 If a Pb-Zn or Zn-Al alloy is used, the Zn content is pref. 15-45 wt.%, the coating temp. being higher for the lower Zn contents with Zn-Al alloys and max. 960 deg. C for an alloy Al alloy with min. 40 wt.% Zn. For Pb-Zn alloys with max. 95 wt.% Pb, the max. coating temp. is 900 deg. C. The meniscus process is carried out under a protective gas, pref. without excess pressure and without protective melt. The metal added to the alloy is Ti, Ta, Cr or W.  
 The process is useful for producing wettable protective, adhesive or contact films on porous or nonporous carbon filaments, fibres, fabrics, felts or mouldings, including electrodes for Al mfr.  
 A firmly adhering carbide film is formed rapidly and impurities are not introduced. In examples, uses include current collectors for lead-acid batteries.  
 O/O  
 FS CPI EPI GMP1  
 FA AB  
 MC CPI: L02-H04A; M13-D  
 EPI: X16-E02; X16-E04  
 L33 ANSWER 45 OF 67 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1  
 AN 1984:217725 HCAPLUS  
 DN 100:217725  
 TI Hydrogen oxidation behavior and structure of gas-diffusion electrodes consisting of tungsten carbide-poly(tetrafluoroethylene) system  
 AU Hojo, Junichi; Nakahara, Katsumasa; Matsumoto, Masashi; Kato, Akio  
 CS Coll. Eng., Kyushu Univ., Fukuoka, Japan  
 SO Funtai Oyobi Funmatsuyakin (1984), 31(2), 45-50  
 CODEN: FOFUA2; ISSN: 0532-8799  
 DT Journal  
 LA Japanese  
 CC 72-2 (Electrochemistry)  
 Section cross-reference(s): 67  
 AB Porous gas-diffusion electrodes contg. WC catalyst (particles size: 0.07 or 1.2  $\mu$ m.) were prepd. by the sintering of WC/PTFE powder mixt., and their H oxidn. activity was investigated at the potential below +300 mV (vs. normal H electrode) in 1N H2SO4 under 1 atm H at 25.degree. with emphasis on the effect of the electrode structure. It was confirmed that there is a most appropriate amt. of PTFE. H oxidn. is governed by the elec. cond. of the electrode, i.e., the current-collecting ability. An increase in molding pressure of the electrode film accelerated the H oxidn. which may be due to the combined effect of a moderate hydrophobic action by PTFE and the increase in the elec. cond. of the electrode.  
 ST hydrogen oxidn gas diffusion anode; tungsten carbide catalyst electrooxidn hydrogen; PTFE tungsten carbide anode hydrogen  
 IT Anodes  
 (gas-diffusion, PTFE/tungsten carbide, for hydrogen)  
 IT Electric conductivity and conduction

(of gas-diffusion **anode**, hydrogen oxidn. in relation to)

IT Oxidation, electrochemical  
(of hydrogen, on PTFE/tungsten carbide gas-diffusion **anode**)

IT Oxidation catalysts  
(electrochem., tungsten carbide, for hydrogen oxidn.)

IT 12070-12-1  
RL: PRP (Properties)  
(catalytic gas-diffusion **anode** from PTFE and, hydrogen oxidn.  
on)

IT 9002-84-0  
RL: PRP (Properties)  
(gas-diffusion **anode** from tungsten carbide and, hydrogen  
oxidn. on)

IT 1333-74-0, reactions  
RL: RCT (Reactant)  
(oxidn. of, on PTFE/tungsten carbide gas-diffusion **anode**)

L33 ANSWER 46 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1983-717268 (29) WPIX

DNN N1983-127793 DNC C1983-069294

TI Battery with at least 1 **electrode** of **current**  
**collector** - and electro active polymer capable of undergoing  
reversible oxidn. or redn. to form linear charged polymer.

DC A18 A85 L03 X12 X16

IN PAPIR, Y S

PA (CALI) CHEVRON RES CO

CYC 14

PI WO 8302368 A 19830707 (198329)\* EN 52p  
RW: AT BE CH DE FR GB LU NL SE  
W: DE GB JP NL

NL 8220498 A 19831101 (198349)

EP 96723 A 19831228 (198401) EN  
R: DE FR GB NL

GB 2122804 A 19840118 (198403)

JP 59500033 W 19840105 (198407)

DE 3249282 T 19841213 (198451)

GB 2122804 B 19860205 (198606)

CA 1202072 A 19860318 (198616)

IL 67556 A 19871020 (198749)

EP 96723 B 19880810 (198832) EN  
R: DE FR GB NL

DE 3278898 G 19880915 (198838)

IT 1155087 B 19870121 (198905)

KR 9003149 B 19900509 (199120)

DE 3249282 C 19920430 (199218) 20p

ADT EP 96723 A EP 1982-900470 19821228; GB 2122804 A GB 1982-20507 19821228;  
JP 59500033 W JP 1982-500581 19821228; DE 3249282 T DE 1982-3249282  
19821228; DE 3249282 C DE 1982-3249282 19821228

PRAI US 1981-334508 19811228; US 1981-334509 19811228; US 1982-448585  
19821215

REP EP 36118; FR 1526657; FR 94536; US 4182797; 3.Jnl.Ref; DE 2043477; EP  
35715; US 4181779

IC C08G073-00; H01B001-12; H01M002-14; H01M004-60; H01M010-40

AB WO 8302368 A UPAB: 19930925  
Battery comprises a case which incorporates a **cathode**  
**electrode**, an **anode electrode**, a separator  
separating the **cathode** and **anode** and an electrolyte,  
at least one of the **electrodes** comprising a **current**  
**collector** and a linear tractable electroactive polymer (I) which  
is capable of undergoing reversible oxidn., reversible redn. or both to

form a linear charged polymer incorporating charge-compensating ionic dopants.

The (I) comprises diradical repeat units chosen from a heterocyclic ring system including at least one gp. 5B or gp. 6B atom, in which none of the ring C atoms are satd., a heterocyclic ring system including at least one gp. 5B or gp. 6B atom in which none of the ring C atoms are satd., and a connecting unit, and mixts. of these, the diradical repeat unit being in the form of a monomeric repeat unit which is capable of undergoing reversible oxidn., reversible redn. or both to form a stable ionic species and in which the connecting unit is a conjugated system or atom or gp. of atoms which maintain pi-orbital overlap with the heterocyclic ring system.

Use of tractable polymers as claimed allows construction of prim. and sec. batteries which are lightweight, and have high energy density, which can be operated under normal ambient conditions and do not contain highly toxic or spontaneously combustible materials, and which can be made in the form of a plurality of thin polymer **electrodes** sandwiched together in laminar form to allow the construction of batteries of non-traditional shape which can be accommodated into a space within a vehicle such as inside door panels, under bonnets and boots, inside seats, etc. B

FS CPI EPI

FA AB

MC CPI: A05-J02; A09-A03; A12-E06; L03-E01B; L03-E01C; L03-E03

EPI: X12-D01C; X16-E01

L33 ANSWER 47 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1983-147964 JAPIO

TI POSITIVE ELECTRODE FOR NONAQUEOUS ELECTROLYTE **BATTERY**

IN IKEDA KONOSUKE; UBUKAWA SATOSHI; NAKAIDO SHIGEHRO; SO SHINJI

PA SANYO ELECTRIC CO LTD

PI JP 58147964 A 19830902 Showa

AI JP 1982-30890 (JP57030890 Showa) 19820226

PRAI JP 1982-30890 19820226

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983

IC ICM H01M004-62

AB PURPOSE: To improve the contact between a positive electrode and electrolyte, and especially increase the electric-discharge characteristic at a high current density of the positive electrode by using a silicate- or phosphate-system heat-proof inorganic adhesive as a binding agent for the positive electrode.

CONSTITUTION: A positive electrode for a nonaqueous electrolyte **battery** is made by applying a paste, which contains a positive active material, a conductive agent and a binding agent used as main components, to a **current collecting** body before the **current collecting** body is coated with the paste is **molded**. In the positive **electrode**, the binding agent is a silicate- or phosphate-system heat-proof inorganic adhesive. The above silicate-system heat-proof inorganic adhesive is prepared by dissolving or dispersing an alkali-metal silicate or its derivative, colloidal silica, and a monomer or **polymer** of a silicate such as an alkyl silicate in water, and appropriately contains a hardener, a heat-proof pigment, a dispersion-stabilizing agent and the like. The above phosphate-system heat-proof inorganic adhesive is prepared by dissolving or dispersing an acid metal-phosphate, an acid salt, such as aluminum phosphate, magnesium phosphate or calcium phosphate in water, and appropriately contains a hardener, a heat-proof pigment, a dispersion-stabilizing agent and the like.

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L33 ANSWER 48 OF 67 JAPIO COPYRIGHT 2002 JPO

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

AN 1983-066265 JAPIO  
 TI ALKALINE BATTERY  
 IN KOGA KENJI; YOSHIDA KAZUMASA  
 PA TOSHIBA BATTERY CO LTD  
 PI JP 58066265 A 19830420 Showa  
 AI JP 1981-164458 (JP56164458 Showa) 19811015  
 PRAI JP 1981-164458 19811015  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983  
 IC ICM H01M004-62  
 AB PURPOSE: To increase work efficiency of mixing and molding of a cathode black mix and obtain an alkaline battery having excellent heavy load discharge performance at low temperature and good storage life at high temperature by mixing porous carbon black having high electrolyte holding capacity to graphite as a conductive mass, and adding crosslinked copolymer of isobutene and maleic anhydride, which has no reducing power to manganese dioxide and absorbs large amount of an electrolyte.  
 CONSTITUTION: Graphite and carbon black as a conductive mass are added to manganese dioxide active mass and they are stirred to make a mixture. A wetting solution prepared in such a way that for example, crosslinked polymer of isobutene and maleic anhydride is added to a potassium hydroxide electrolyte and they are mixed and stirred to make a gel like solution by swelling of polymer, is added to this mixture, then they are kneaded to make a cathode black mix. The cathode black mix is press-molded and filled to a cathode can 1 to make a cathode 2. A gelled anode mass is filled in the inside of the cathode black mix via a nonwoven fabric separator 3. A numerical 5 is a insulating gasket comprising synthetic resin, 6 is a sealing plate which also serves as an anode terminal, 7 is a current collector. The sealing plate 6 is tightly sealed by bending inward an opening 9 via the insulating gasket to construct a cylindrical alkaline battery.  
 COPYRIGHT: (C)1983,JPO&Japio

L33 ANSWER 49 OF 67 JAPIO COPYRIGHT 2002 JPO  
 AN 1982-013669 JAPIO  
 TI ELECTRODE FOR BATTERY OR ELECTROLYSIS  
 IN FUJII TOSHINORI; HIROSE TAKASHI; HASHIMOTO TAKASHI  
 PA MEIDENSHA ELECTRIC MFG CO LTD  
 PI JP 57013669 A 19820123 Showa  
 AI JP 1980-86463 (JP55086463 Showa) 19800627  
 PRAI JP 1980-86463 19800627  
 SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982  
 IC ICM H01M004-86  
 AB PURPOSE: To obtain a cheap electrode which has pliability and increased mechanical-shock resistance by adding a given amount of a conductive material such as carbon black to a thermoplastic, before the mixture is kneaded so as to make the electrode.  
 CONSTITUTION: An electrode 1 used for a secondary zinc-chlorine battery or alkali electrolysis is prepared by adding 20&sim;40wt% of a carbon powder such as carbon black to a thermoplastic such as vinyl chloride or polyethylene, before the mixture is well kneaded and is poured in a metal mold, being followed by subjecting the metal mold filled with the mixture to compression molding. Thus formed electrode 1, inside which a metal net 3 made of a stainless steel or the like is buried, is wrapped in a frame 2 made of the same material as the plastic used for making the electrode 1. By the means mentioned above, the electrode 1 with high mechanical-shock resistance can be obtained at a low cost. Besides, any breakdown of the electrode 1 can

be prevented with the frame 2, and the location of the metal net 3 increases the **current collecting** effect of the electrode 1.  
COPYRIGHT: (C)1982, JPO6Japio

L33 ANSWER 50 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
AN 1981:628086 HCAPLUS  
DN 95:228086  
TI Solid polymer electrolyte  
IN White, Preston Samuel  
PA PPG Industries, Inc., USA  
SO Fr. Demande, 27 pp.  
CODEN: FRXXBL  
DT Patent  
LA French  
IC C25B013-04; C25B001-26  
CC 72-10 (Electrochemistry)  
Section cross-reference(s): 49

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2475581	A1	19810814	FR 1981-2524	19810209
	NL 8100168	A	19810901	NL 1981-168	19810115
	SE 8100305	A	19810812	SE 1981-305	19810120
	NO 8100191	A	19810812	NO 1981-191	19810121
	DE 3104122	A1	19811126	DE 1981-3104122	19810206
	GB 2069006	A	19810819	GB 1981-3971	19810210
	JP 56127782	A2	19811006	JP 1981-18860	19810210
	BE 887464	A1	19810811	BE 1981-203758	19810211
	US 4369103	A	19830118	US 1981-293021	19810814
PRAI	US 1980-120247		19800211		
	US 1979-105055		19791219		
AB	Cells were made with a crosslinked, permionic, carboxylic acid-contg. fluorocarbon resin (Q) diaphragm, contacted on both sides by electrodes with metal current collectors. The cathode was made by molding a powd. mixt. of 316 stainless steel, Fe or Ni in a carboxylic acid contg. thermoplastic, fluorocarbon, ion-exchange resin (X) binder to a Cu screen current collector. An anode was made by coating 1 side of the Q diaphragm with 0.25-mm thick layer of a powd. mixt. of 1 part graphite and 2 parts X binder, and molding it in place for 10 min at 200.degree. under 55 kg/cm2 pressure. A Pt-Sn-Ru coated Ti screen current collector was pressed against the anode coating. Alternately, the anode compn. could be molded on the Ti screen. The cathode was pressed against the other side of the diaphragm to make a cell. The cell is useful for prodn. of Cl and H from satd. brine.				
ST	carboxy fluoropolymer diaphragm electrolyzer brine; solid polymer electrolyte electrolyzer brine				
IT	Brines (electrolysis of, carboxy group-contg. fluoropolymer diaphragm cell for)				
IT	Fluoropolymers RL: USES (Uses) (carboxy group-contg., diaphragm, for electrolytic cell for brine electrolysis)				
IT	Electrolytic cells (diaphragm, with carboxy group-contg. electrolyte, for brine electrolysis)				
IT	7439-89-6, uses and miscellaneous 7440-02-0, uses and miscellaneous				

7782-42-5, uses and miscellaneous  
 RL: USES (Uses)  
 (cathode, with fluoropolymer binder, for diaphragm cell for  
 brine electrolysis)

IT 11107-04-3  
 RL: PRP (Properties)  
 (cathode, with fluoropolymer binder, for diaphragm cell for  
 brine electrolysis)

IT 7440-05-3, uses and miscellaneous 7440-06-4, uses and miscellaneous  
 7440-18-8, uses and miscellaneous 7440-31-5, uses and miscellaneous  
 RL: USES (Uses)  
 (current collector coating contg., on titanium, for  
 anode for diaphragm cell for brine electrolysis)

IT 7440-32-6, uses and miscellaneous  
 RL: USES (Uses)  
 (current collector, metal-coated, on anode  
 , for diaphragm cell for brine electrolysis)

IT 1310-73-2E, preparation 1333-74-0P, preparation 7782-50-5P,  
 preparation  
 RL: PREP (Preparation)  
 (manuf. of, in brine electrolysis, carboxy-group contg. fluoropolymer  
 diaphragm cell for)

L33 ANSWER 51 OF 67 NTIS COPYRIGHT 2002 NTIS DUPLICATE DUPLICATE 2  
 AN 1981(46):06085 NTIS Order Number: PB81-201964/XAB  
 TI Solid Polymer Electrolyte Water Electrolysis Technology Development for  
 Large Scale Hydrogen Production (Design Phase). Annual rept.  
 AU Russell, J. H.  
 CS General Electric Co., Wilmington, MA. Direct Energy Conversion Programs.  
 Sponsor: Gas Research Inst., Chicago, IL. (042708004)  
 NR PB81-201964/XAB; GRI-79/0102  
 28p; Nov 1980  
 NC Contract(s): GRI-5011-323-0143  
 DT Report  
 CY United States  
 LA English  
 AV Order this product from NTIS by: phone at 1-800-553-NTIS (U.S.  
 customers); (703)605-6000 (other countries); fax at (703)605-6900; and  
 email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road,  
 Springfield, VA, 22161, USA.  
 NTIS Prices: PC A03/MF A01  
 OS GRA&18118  
 AB The design for a water electrolysis module containing (14) cells each  
 with 10 sq ft active area was completed. This included final drawings  
 for: Membrane/electrode assembly, Molded carbon  
 current collector, Fluid plates, Electrical bus  
 plates, and Pneumatic end plates and boiling arrangements.

CC 99B Industrial chemistry and chemical process engineering  
 97K Fuels

CT \*Hydrogen production; \*Electrolytes; \*Water; Electrolysis; Polymers;  
 Equipment; Design criteria; Performance evaluation; Technology

L33 ANSWER 52 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1980:647411 HCAPLUS  
 DN 93:247411  
 TI Organic electrolyte battery  
 PA Matsushita Electric Industrial Co., Ltd., Japan  
 SO Jpn. Tokyo Koho, 4 pp.  
 CODEN: JAXXAD  
 DT Patent

LA Japanese  
 IC H01M006-16; H01M004-06; H01M004-64; H01M006-14  
 CC 72-2 (Electrochemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55025472	B4	19800705	JP 1976-84300	19760714
AB	An org. electrolyte battery is manufd. by <b>pressing a molded org. electrolyte-impregnated cathode</b> against the bottom of a battery case provided with irregularities, then attaching the separator and <b>anode</b> . Optionally, the irregular bottom can be replaced with an electrolyte-resistant wire mesh, expanded metal, etc., serving as <b>current collector</b> .				
ST	org electrolyte battery				
IT	Batteries, primary (nonaq.)				

L33 ANSWER 53 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1980-51552C [29] WPIX

TI Electrolysis cell having ion permeable membrane - with **current collector** having ribs to define flow channels, has inlet restriction to prevent reverse flow.

DC E36 J03

IN LAWRENCE, R J; RUSSELL, J H

PA (GENE) GENERAL ELECTRIC CO

CYC 6

PI US 4210512 A 19800701 (198029)\*

DE 3000313 A 19800724 (198031)

GB 2038875 A 19800730 (198031)

FR 2445862 A 19800905 (198043)

GB 2038875 B 19830112 (198302)

IT 1130185 B 19860611 (198746)

JP 55113886 A 19800902 (198911)

JP 01010597 B 19890222 (198911)

PRAI US 1979-1879 19790108

IC C25B001-10; C25B009-04; C25B011-20; C25B015-08; C25C000-00; H01B001-04

AB US 4210512 A UPAB: 19930902

Electrolysis cell partic. for water, of the type described in 4039409 has an ion permeable, lig. impervious membrane separating the cell into **anode** and **cathode** compartments. **Anode** and **cathode electrodes** are bonded to opposite sides of the membrane and a **moulded graphite current collector** (10) has a series of ribs (12) contacting the **anode**, the ribs forming fluid distribution channels (13). The inlet to each channel includes a restriction (32) to provide a **pressure drop** which is larger than the **pressure** variations that occur downstream of the inlet.

The restriction prevents the transportation of evolved gas towards the inlet manifold and the consequential blocking of the channels.

FS CPI

FA AB

MC CPI: E31-A; E31-D; J03-B02

L33 ANSWER 54 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1979-64105B [35] WPIX

TI Alkaline storage battery zinc **anode** - formed by depositing bismuth film on silver, copper or brass **current collector**, **press moulding** zinc powder onto film.

DC L03 X16

PA (TOKE) TOKYO SHIBAURA ELECTRIC CO

CYC 1

PI JP 54021929 B 19790803 (197935)\*

JP 50080446 A 19750630 (197935)

PRAI JP 1973-130953 19731121

IC H01M004-66

AB JP 79021929 B UPAB: 19930901

The battery **anode** consists of a zinc **electrode** fabricated by depositing a metal film of Bi on a metal **current collector** of Ag, Cu or brass, and **press-moulding** an active material powder consisting mainly of Zn, on the Bi metal film on the **current collector**.

FS CPI EPI

FA AB

MC CPI: L03-E01B

L33 ANSWER 55 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1979-47697B [26] WPIX

TI Solid electrolyte battery - having a lithium, sodium or silver tungstate **anode** which changes colour when emf is reduced.

DC E13 L03 X16

PA (NIST) JAPAN STORAGE BATTERY CO LTD

CYC 1

PI JP 54060425 A 19790515 (197926)\*

PRAI JP 1977-127154 19771021

IC H01M004-58

AB JP 54060425 A UPAB: 19930901

The battery has an **anode** of  $MxWO_3$  (where x is a positive number and M is Li, Na or Ag). When the capacity of the battery is reduced by discharge, the colour of the **anode** changes. It is thus possible to display the end of the life of the battery.

In an example, **cathode** comprises a mixt. consisting of 60 wt.% I2 and 40 wt.% phenothiazine. The solid electrolyte consists of  $RbAg_4I_5$ . The **anode** consists of  $Ag_0.1WO_3$ . 50 mg of the **cathode**, 500 mg of the solid electrolyte 4 and 500 mg of the **anode** are stacked and **press.-moulded** into a disc. A **cathode current collector** of Au is formed on the **cathode**. A **cathode lead** is bonded to the **cathode current collector**. An **anode current collector** of  $SnO_2$  as a transparent **electrode** is formed on the **anode**. An **anode lead** is inserted into the **anode**.

FS CPI EPI

FA AB

MC CPI: E35-B; E35-Q; L03-E01B

L33 ANSWER 56 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1977:591231 HCAPLUS

DN 87:191231

TI Gas diffusion **electrode**

IN Izawa, Kiyoshi; Aramaki, Isao

PA Shin-Kobe Electric Machinery Co., Ltd., Japan

SO Japan. Kokai, 2 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C25B011-00

CC 72-7 (Electrochemistry)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52066876	A2	19770602	JP 1975-142708	19751129
	JP 57045315	B4	19820927		
AB	A gas-diffusion <b>electrode</b> is prep'd. by pasting a water-repellent film on the powder layer of a <b>soldered electrode</b> paste, bending (bowing) the <b>soldered electrode</b> , then heat treating. By avoiding the application of <b>pressure</b> required in conventional processes, a drop in gas permeability of the water-repellent film, which leads to increased polarization in the high c.d. region and thus lowering of the <b>electrode</b> characteristics, is prevented. Thus, a Ni mesh ( <b>current collector</b> ) was coated with a paste obtained from a catalyst, powd. C, powd. graphite, and a water-repellent binder (a C2F4 polymer dispersion), the coated grid was <b>pressed</b> (1.0 ton/cm <sup>2</sup> ) into the shape of an <b>electrode</b> , the paste layer was coated with a C2F4-C3F6 copolymer dispersion (adhesive), and a water-repellent layer was applied over the adhesive layer. The Ni mesh was bowed with the coated surface to the outside, the Ni mesh was clamped on a metal tube then heated for 30-90 min at 200-300.degree. to effect good adherence between the <b>electrode</b> material and the water-repellent film. The metal tube was then removed to give a gas-diffusion <b>electrode</b> .				
ST	<b>electrode</b> gas diffusion catalytic; nickel carbon graphite				
IT	<b>electrode</b> catalytic				
IT	<b>Electrodes</b> (gas-diffusion catalytic, nickel mesh with carbon-graphite coating)				
IT	7440-02-0, uses and miscellaneous RL: USES (Uses) ( <b>electrodes</b> , gas-diffusion, carbon-graphite coatings on)				
IT	7440-44-0, uses and miscellaneous 7782-42-5, uses and miscellaneous RL: USES (Uses) ( <b>electrodes</b> , gas-diffusion, coated on nickel mesh)				

L33 ANSWER 57 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1978-01549A [01] WPIX

TI Concrete parts damp heat treatment **mould** - ensures process automation and has corona discharge **electrodes** in holes of cover.

DC L02 P64

PA (SOYU-R) SOYUZVODPROEKT PROD

CYC 1

FI SU 549449 A 19770520 (197801)\*

PRAI SU 1975-2173848 19750918

IC B28B007-24; C04B041-30

AB SU 549449 A UPAB: 19930901

The control system of heat or damp heat treatment of reinforced concrete parts determines the rate of setting using a corona discharge assembly. The latter comprises discharge **electrodes** set in holes of the **mould** cover, and a **collecting electrode** in the form of a grid attached to the bottom of the cover via a dielectric packing.

The concrete poured into the space bounded by the bottom and sides of the **mould** is overlaid with the grid **electrode**, and the latter is covered with the dielectric packing beneath the cover. The discharge **electrodes** of the cover are connected to a terminal of the h.v. source while the other terminal is connected to the **mould** bottom, cover and to the grid via a controller. The discharges between the two types of **electrodes** have an intensity which depends on the temp. and humidity of air in the inter **electrode** gap, as

well as on the degree of concrete mass crystallization. The **current** of the **collecting electrodes** passes through the controller which switches on or off the electric heaters of the **mould**.

FS CPI GMPI  
FA AB  
MC CPI: L02-D04

L33 ANSWER 58 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:76810 HCAPLUS

DN 84:76810

TI Metal-air cells and air **cathodes** for use in them

IN Buzzelli, Edward S.

PA Westinghouse Electric Corp., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

IC HOIM

NCL 136086000A

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3925100	A	19751209	US 1974-446088	19740226
	GB 1499021	A	19780125	GB 1975-6615	19750217
	DE 2507774	A1	19760205	DE 1975-2507774	19750222
	FR 2262414	A1	19750919	FR 1975-5867	19750225
	FR 2262414	B1	19810306		
	BE 825972	A1	19750826	BE 1975-153729	19750226
	SE 7502176	A	19750827	SE 1975-2176	19750226
	SE 408608	C	19790927		
	SE 408608	B	19790618		
	JP 50119245	A2	19750918	JP 1975-22970	19750226
	JP 57032465	B4	19820710		
PRAI	US 1974-446088		19740226		
AB	<p>The air <b>electrode</b> includes a hydrophilic layer which comprises a <b>current collector</b> of metal fibers and a hydrophilic compn. contg. electrochem. active materials into which the <b>current collector</b> is <b>pressed</b> or <b>molded</b>, and a hydrophobic layer laminated to the <b>molded</b> hydrophilic layer. The hydrophilic compn. includes a high surface area C [7440-44-0], preferably a Ag [7440-22-4]-Hg [7439-97-6] catalyst, a wet-proofing agent such as poly(tetrafluoroethylene) [9002-84-0], and MnO<sub>2</sub>. The components are mixed together in powder form to which deionized H<sub>2</sub>O is added to form a paste-like consistency. The fiber metal mesh <b>current collector</b>, preferably Ni [7440-02-0] or Ni-plated steel, is then integrated within the compn. and <b>press molded</b> into the hydrophilic layer. To this <b>molded</b> composite layer is laminated a hydrophobic layer of porous, fibrillated, unsintered poly(tetrafluoroethylene) having a total porosity 35-60 vol.% and a thickness 0.005-0.20 in. The hydrophobic layer permits rapid diffusion of gas, such as O and air, but prohibits the passage of alkali hydroxide electrolytes. The <b>electrodes</b> operate for &gt;4000 hr. They have a performance level of 50-200 mV better than other known useful air <b>electrodes</b> systems at 50 mA/cm<sup>2</sup>.</p>				
ST	air metal battery <b>cathode</b>				
IT	<b>Cathodes</b> (battery, air-metal catalytic)				
IT	7439-97-6, uses and miscellaneous		7440-22-4, uses and miscellaneous		

RL: CAT (Catalyst use); USES (Uses)  
(catalyst, air-metal battery)  
IT 7440-02-0, uses and miscellaneous  
RL: USES (Uses)  
(cathode current collector from,  
air-metal battery)  
IT 7440-44-0, uses and miscellaneous 9002-84-0  
RL: USES (Uses)  
(cathodes contg., air-metal battery)

L33 ANSWER 59 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:423548 HCAPLUS

DN 85:23548

TI **Electrodes** for batteries

IN Gadessaud, Robert; Audry, Claudette

PA Compagnie Generale d'Electricite, Fr.

SO Ger. Offen., 19 pp.

CODEN: GWXXBX

DT Patent

LA German

IC H01M

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2513431	A1	19751002	DE 1975-2513431	19750326
	FR 2266316	A2	19751024	FR 1974-10902	19740328
	FR 2266316	B2	19790525		
	FR 2266319	A2	19751024	FR 1974-10903	19740328
	BE 826207	A1	19750903	BE 1975-1006495	19750303
	US 3967976	A	19760706	US 1975-561501	19750324
	DK 7501324	A	19750929	DK 1975-1324	19750326
	DK 137737	C	19781002		
	NL 7503650	A	19750930	NL 1975-3650	19750326
	GB 1489277	A	19771019	GB 1975-12724	19750326
	SE 7503637	A	19751215	SE 1975-3637	19750327
	SE 408607	C	19790927		
	SE 408607	B	19790618		
	JP 50129927	A2	19751014	JP 1975-37048	19750328
	SE 7809991	A	19780922	SE 1978-9991	19780922
PRAI	FR 1974-10902		19740328		
	FR 1974-10903		19740328		

AB In manufg. of battery **electrodes** with improved mech. and elec. properties, a **current collector** of an, e.g., Ag-plated Ni foil or grid is coated with vertical strips of a H<sub>2</sub>O-repellent polymer, e.g., poly(tetrafluoroethylene) or poly(dichlorodifluoroethylene). The coated **collector** is set into a mold into which an **electrode** active material is cast. After solidification at approx. -20 degrees, and chem. conversion treatment, the **electrode** is washed with H<sub>2</sub>O, dried, pressed, and coated with a thin polymer layer. Gases formed in **electrodes** during the battery operation can escape through free spaces formed between low-adherent active-material paste and polymer strips.  
ST battery secondary **electrode**  
IT **Electrodes**  
(battery, with high mech. and elec. properties)

L33 ANSWER 60 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1974:508469 HCAPLUS

DN 81:108469

TI Lithium-metal molybdate organic electrolyte cell  
 IN Dey, Arabinda N.; Holmes, Robert W.  
 PA Mallory, P. R., and Co., Inc.  
 SO U.S., 4 pp. Continuation-in-part of U.S. 3,711,334 (CA 78:79027f)  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC H01M  
 NCL 136083000  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 FAN.CN7 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3822148	A	19740702	US 1972-254332	19720515
	US 3711334	A	19730116	US 1970-54931	19700715
PRAI	US 1970-54931		19700715		

AB Continuation-in-part of U.S. 3,711,334 (CA 78:79027f). An elec. cell is described which is comprised of pos. **electrodes** from any of the molybdates of Ag, Fe, CO, Ni, Hg, Ti, Pb, Bi, and their mixts. and neg. **electrodes** of any of the light metals, such as Li. The **cathodes** are fabricated from a mixt. of premixed and preslugged powd. depolarizer and graphite in a 7:3 wt. ratio with 3 parts by wt. of a binder, an aq. soln. of poly(tetrafluoroethylene). The water is displaced by adding a sufficient amt. of org. solvent to form a paste. The paste is then thoroughly mixed to form an easily pliable dough and any excess solvent is decanted. The **cathodes** are **moulded** on and around a **Ni current collector**, fabricated from metal screening or expanded metal by placing layers of the dough, above and below the **current collector** which, in turn, is placed in a rectangular die. The dough is **pressed** at 70,000-80,000 psi. The excess solvent such as iso-PrOH is squeezed out of the dough and there results a compact rectangular **cathode** with adequate mech. integrity for further treatment. This **cathode** is then dried in air and cured at 200-350.degree. for 1.5-3 hr. Although the curing process enhances the mech. integrity of the **cathode** even further, these **cathodes** can be used without curing as well. Elec. cond. of such a **cathode** is more than adequate for its purpose. The ratio of active material to graphite or other conductive inert additive and the ratio of the total mix to binder can be varied widely.

ST lithium metal molybdate battery  
 IT **Cathodes**  
     (battery, molybdate)  
 IT Batteries, primary  
     (lithium-molybdate)  
 IT 10190-55-3 13595-85-2 13762-14-6 13765-74-7 14177-55-0  
 RL: USES (Uses)  
     (**cathodes**, battery)

L33 ANSWER 61 OF 67 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1973:460876 HCAPLUS  
 DN 79:60876  
 TI Semiconducting **cathode** for storage batteries  
 PA Molecular Energy Corp.  
 SO Fr. Demande, 8 pp.  
 CODEN: FRXXBL  
 DT Patent  
 LA French  
 IC H01M  
 CC 77-2 (Electrochemistry)

## Section cross-reference(s): 71

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2146169	A1	19730302	FR 1971-26883	19710722
	FR 2146169	A3	19730302		
	FR 2146169	B3	19740405		

AB One part by weight of a semiconducting sulfide coating, per 4 to 50 parts of metal halide or oxide granules 0.15 to 0.3 mm diam., was formed on the granules by treating them with (NH<sub>4</sub>)<sub>2</sub>S or alkali metal sulfide in a soln. or a fluidized bed. The coated particles were **molded** into **cathodes**. For example, a soln. of 50 g Na<sub>2</sub>S in 1.5 l. MeOH was added slowly to a stirred suspension of 500 g CuF<sub>2</sub> in 1 l. MeOH to form a CuS coating on the granules. The coated granules were rinsed free of Na<sub>2</sub>S, dried, coated with 3% poly(vinyl chloride) and **molded** on a screen **current collector** for several min at 150.degree. to make a strong **cathode**. A cell contg. this **cathode** and a Mg **anode** had a c.d. of 0.8 A/cm<sup>2</sup>. Other high energy d. **cathodes** were made of AgCl, NiF<sub>2</sub>, and PbO<sub>2</sub> granules.

ST semiconducting **cathode** storage battery; sulfide coating

**cathode** storage battery; PVC sulfide **cathode** storage

battery; magnesium sulfide battery

IT **Cathodes**

(battery, semiconducting-sulfide, coatings formed in situ on halide or oxide granules in)

IT Batteries, secondary

(magnesium-copper sulfide, coatings formed in situ on halide or oxide granules in)

IT 7439-95-4, uses and miscellaneous

RL: USES (Uses)

(**anodes**, battery, with semiconducting sulfide **cathode**

, coatings formed in situ on halide or oxide granules in)

IT 1314-87-0 1317-40-4 11113-75-0 21548-73-2

RL: PRP (Properties)

(**cathodes**, battery, semiconducting, coatings formed in situ on halide or oxide granules in)

L33 ANSWER 62 OF 67 HCAPLUS COPYRIGHT 2002 ACS

AN 1968:65211 HCAPLUS

DN 68:65211

TI Silver **electrodes** for electric batteries

IN Strauss, Howard J.

PA Clevite Corp.

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

NCL 136120000

CC 77 (Electrochemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3359138		19671219	US	19650107

AB Ag **electrodes** having high porosity, high d., and fine, uniform pores can be mass produced by either pouring molten AgCl into a **mold** over **current collector** or grid or by rolling solidified AgCl slabs into sheets and **pressing** the **current collectors** into the sheet or between 2 sheets at 400-50.degree.F. The structure is coated with Ag by redn. with

hydroxylamine or other photographic developers for .apprx.1 min. and rendered free of Cl- by cathodic redn. Thus, Ag wire collector was embedded in solidified fused AgCl sheet (17/8 .times. 21/4 .times. 0.03 in.) at 400.degree.F. and a force of 6 tons. After degreasing with perchloroethylene, the surface of the sheet was reduced with Kodak Dektol and electrolyzed with Mg as a pos. **electrode** and 5% KOH electrolyte at 20 amp./in.2 The mech. strong, very porous **electrode** contained 8.6 g. Ag, was an av. of 0.0279 in. thick, had d. of 5.16 g./cc. and capacity 2.14 amp. hrs. as compared to 6.46, 0.0291, 3.69, and 1.61, resp., for **electrodes** manufd. from Ag oxide paste.

ST BATTERIES AG **ELECTRODES**; POROUS AG **ELECTRODES**

BATTERIES; SILVER **ELECTRODES** BATTERIES

IT **Electrodes**

(battery, silver, by redn. of silver halide with photographic developer)

L33 ANSWER 63 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 2002-025547 JAPIO

TI ELECTRODE FOR ALKALINE SECONDARY **BATTERY**

IN MATSUMOTO KOICHI

PA ASAHI KASEI CORP

PI JP 2002025547 A 20020125 Heisei

AI JP 2000-210134 (JP2000210134 Heisei) 20000711

PRAI JP 2000-210134 20000711

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002

IC ICM H01M004-24

ICS H01M004-26; H01M004-32; H01M004-62;

H01M004-70

AB PROBLEM TO BE SOLVED: To aim at improving adhesion of an electrode active substance and a **current collector** substrate, and aim at improving electrochemical durability.

SOLUTION: By using a **polymer** having a chemical bonding property to the **electrode** active substance and having an ionic conductivity as a binder in a paste electrode of an alkaline secondary **battery**, the adhesion between the electrode active substance and the **current collector** metal plate can be improved, and a thin of electrode and an improvement of **battery** characteristic can be realized. Especially when perfluorocarbon **polymer** having sulfonic acid group is used as a binder for the positive electrode, the positive electrode is superior in the oxidation resistance which is especially required for the positive electrode, and appropriate. COPYRIGHT: (C)2002, JPO

L33 ANSWER 64 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 2001-118565 JAPIO

TI ELECTRODE-FORMING BODY, METHOD FOR MANUFACTURING AND SECONDARY **BATTERY** USING THE SAME

IN FUJIWARA MASAKI; NAKAGAWA YUJI; KUROSAKI MASAHITO; KANEKO SHINAKO; HARADA MANABU; NISHIYAMA TOSHIHIKO

PA NEC CORP

PI JP 2001118565 A 20010427 Heisei

AI JP 1999-292537 (JP11292537 Heisei) 19991014

PRAI JP 1999-292537 19991014

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001

IC ICM H01M004-02

ICS H01M004-04; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a secondary **battery**, having large energy and power density and high flexibility on planning of the **battery** due to using high-molecular active materials.

SOLUTION: An electrode-forming body is manufactured by heat-pressing **electrode** materials mixed high-molecular active materials, a conducting auxiliary agent and a **plasticizer** together with at least one **current collecting** body.  
COPYRIGHT: (C)2001,JPO

L33 ANSWER 65 OF 67 JAFIO COPYRIGHT 2002 JPO

AN 2000-012085 JAFIO

TI MANUFACTURE OF LITHIUM ION **POLYMER** TYPE SECONDARY BATTERY

IN NAKAJIMA AKASHI

PA JAPAN ENERGY CORP

PI JP 2000012085 A 20000114 Heisei

AI JP 1998-193632 (JPL0193632 Heisei) 19980625

PRAI JP 1998-193632 19980625

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

IC ICM H01M010-40

ICS H01M004-02; H01M010-04

AB PROBLEM TO BE SOLVED: To provide a manufacturing method capable of improving the productivity and assembling precision of a lithium ion **polymer** secondary battery and conformable to the mass production thereof.

SOLUTION: A positive electrode material, a negative electrode material and a separator are applied to carrier materials 1, respectively, the resulting carrier materials are cut in a prescribed width, a **current collector** is put between them to laminate both sides of the **current collector** with the cut positive electrode and negative electrode films, whereby a positive electrode film and a negative electrode film are formed. The separator film is stuck to both sides of the laminated negative electrode film to form a negative electrode film with a separator 8. The **current collecting** mesh parts of the positive electrode film and the negative electrode film with separator 8 are punched into a prescribed form by the use of a metal **mold**, only the positive **electrode** film on the carrier material is half-cut by use of a metal mold, and the half-cut positive electrode film 6 is transferred to both sides of the negative electrode film with the separator 8 at fixed intervals to laminate it. The transferred and laminated assembly is punched into individual **batteries** by the use of a metal mold.  
COPYRIGHT: (C)2000,JPO

L33 ANSWER 66 OF 67 WPIX (C) 2002 THOMSON DERWENT

AN 1971-41428S [24] WPIX

TI Catalytically active **electrodes** for fuel - cells batteries.

DC A15 A85 L03 X16

PA (GENE) GENERAL ELECTRIC CO

CYC 1

PI US 3583886 A (197124)\*

PRAI US 1964-411693 19641117

IC H01M013-08

AB US 3583886 A UPAB: 19930831

Catalytic **electrode** is formed from a **moulding** comp. constg. of a noble metal powder having an average particle size < 250 Angstroms and 0.5-50% by wt. of a thermoplastic binder having a particle size of <50 mu and a critical surface tension <32 dynes/cm. The comp. is **moulded** into a billet under a **pressure** of 1800-3000 psi and at a temp. of 350 degrees - 750 degrees F. The billet is sliced into thin sheets (thickness 0.1-1.0 mil) and united to one or more **current collectors**. The noble metal is platinum black and thermoplastic binder is PTFE.

FS CPI EPI  
FA AB  
MC CPI: A04-E08; A12-E06; L03-E04B

L33 ANSWER 67 OF 67 WPIX (C) 2002 THOMSON DERWENT  
AN 1972-76137T [48] WPIX  
TI **Pressed-powder electrodes** - binder free by high  
**pressure moulding** of mixt of active material coated with  
porous carbon and den.

DC L03 P78 X16  
PA (GATE) GATES RUBBER CO  
CYC 4

PI DE 2223149 A (197248)\*  
US 3817789 A 19740618 (197426)  
GB 1375462 A 19741127 (197448)  
DE 2223149 B 19750515 (197521)  
CA 979484 A 19751209 (197552)

PRAI US 1971-143058 19710513  
IC B44D001-18; H01M004-30; H01M035-18; H01M043-00  
AB DE 2223149 A UPAB: 19930831

The **electrodes** are produced by **pressing** a mixt. of (1)  
active material, coated with conductive carbon material (2) and (3)  
conductive material with dendritic structure onto a **current**  
**collector** at **pressures** of 35.15 x 106 kg/cm. The  
technique is esp. for Ni **electrodes** for Ni-Cd and Ni-Zn  
batteries. The cells have high overall capacity and the  
**electrodes** are flexible. (1) is Mn, Pb, Ag or Hg (II) oxide or Cd  
or its oxide or esp. Ni-oxygen cpd and (2) is pref graphite. (3) is  
powdered Fe or Ni carbonyl, graphite fibres, electrolyte Fe or Ni, Ta or  
W.

FS CPI EPI GMPI  
FA AB  
MC CPI: L03-E01B